



January 20, 2013

Mr. Brandon Danforth
Environmental Specialist
WPX Energy
1058 County Road 215
Parachute, Colorado 81635

RE: GV 86-2 Drill Pad Baseline Results Report, October 2013 Event

Dear Mr. Danforth,

Western Water & Land, Inc. (WWL) has completed the initial baseline water sampling for the WPX Energy Rocky Mountain LLC (WPX) GV 86-2 Drill Pad in accordance with Colorado Oil and Gas Conservation Commission (COGCC) Rule 609. The GV 86-2 Drill Pad is located in NE¼, SW ¼, Section 2, Township 7 South, Range 95 West, 6th PM.

In accordance with Rule 609, the baseline water quality evaluation considered all water sources (domestic wells or springs) within a 0.5-mile radius of the referenced drill pad (oil and gas location). A preliminary screening of the groundwater sources was completed to identify the sources that are potentially available for sampling pending the consent of the structure owners. Each potentially Available Water Source was then evaluated to identify the preferred sources for the baseline program. If the number of potentially available sources was four or less, all of the sources were included in the list of preferred sources. If more than four sources were potentially available, the sources were prioritized based on WWL's hydrologic expertise and in accordance with Rule 609. A complete description of the water source evaluation process and results are provided in the water source evaluation report (GV 86-2 Drill Pad Baseline Water Quality Evaluation, October 10, 2013).

This report summarizes the selection of sampling locations and associated field sampling activities, and the quality control and water chemistry results.

FIELD SAMPLING LOCATIONS AND ACTIVITIES

As described in the GV 86-2 Drill Pad Baseline Water Quality Evaluation, October 10, 2013, four potential sampling locations were identified for field sampling of water quality consistent with requirements of Rule 609. According to state records, the landowners, water well permit holders or water right holders were mailed access request letters by way of certified U.S. Postal Service mail. Four wells were identified as preferred sampling locations:

- Water Well Permit No. 149334
- Water Well Permit No. 267230

- Water Well Permit No. 149891
- Water Well Permit No. 120988

Access was not granted for Water Well Permit No. 149334 or Water Well Permit No. 120988 within the 30-day response period required by Rule 609. Access was granted for Water Well Permit No. 267230 after four samples were already collected; therefore, it was not included in the baseline water quality program. WPX was granted permission to sample three alternative water sources: Water Well Permit No. 112927, Water Well Permit No. 273609, and Water Well Permit No. 100326.

Four samples were collected for the GV 86-2 Drill Pad. Sample Mitchell 149891 was collected from Water Well Permit No. 149891 on October 16th, 2013, sample Schuette 273609 was collected from Water Well Permit No. 273609 on October 17th, 2013, sample Firth 112927 was collected from Water Well Permit No. 112927 on October 21st, 2013, and sample Rice-Well was collected from Water Well Permit No. 100326 on October 22nd, 2013.

Mr. Orley Mitchell and Mrs. Thea Mitchell were present when sample Mitchell 149891 was collected. The sample was collected from a hose bib located near the front door of the residence. There was no water treatment system in use before the sampling point. Seven casing volumes were purged because field parameters did not stabilize according to the WPX Sampling and Analysis Plan (SAP) parameter stabilization criteria. Sample Schuette 273609 was collected from a hydrant behind a barn on Mr. Mark Schuette's property. There was no water treatment system in use before the sampling point. Sample Firth 112927 was collected from a hose bib located next to the well. A friend of the property owner Mr. Samuel Firth (Ms. Rochelle Morrison) was present during sampling. Ms. Morrison explained to WWL personnel that if the well is pumped too long it often brings sediment up and plugs or damages household appliances. She had been running the well intermittently for three hours prior to our arrival and requested that we purge the well for no longer than ten minutes. As a result of these events, the sample was collected after the well was purged for ten minutes; field parameters were not stable according to the WPX SAP criteria. There was no water treatment system in use before the sampling point. Sample Rice-Well was collected from a hydrant in the lawn to the west of the Rice residence. There was no water treatment system in use before the sampling point. Mr. John Rice was present during sampling. See Figure 1 for the sampled locations. Photographs of the sampling sites are shown in Attachment A. Field monitoring forms are shown in Attachment B.

All sampling procedures followed the WPX SAP and COGCC Model SAP. Sampling Method 1 for wells with pumps and effervescent samples, described in Version 1 of the COGCC Model SAP, was used to collect these samples.

Samples were carefully packed in plastic ice chests (coolers) with ice and shipped to the analytical laboratory (ALS Laboratory, Fort Collins, Colorado) by way of overnight courier (FedEx Ground).

QUALITY CONTROL

Quality control measures consisted of a review of field sampling procedures, and the analytical laboratory quality control data. Laboratory quality control information was reviewed and checked for consistency in the assignment of data qualifiers. In addition, WWL conducted quality control evaluations of cation-anion balance (CAB) and total dissolved solids (calculated/measured ratio), and assigned additional qualifiers to analytical results as necessary.

Field Procedures

WWL conducted field sampling procedures in accordance with the COGCC Model SAP. All samples were collected by direct filling methods; dissolved gas sampling was done using Method 1 for wells with pumps and effervescent samples. No field procedure deviations occurred that were cause for data qualification.

COC

The chain-of-custody form was reviewed for correct and complete sample IDs, requested analysis, and other information. The analytes requested on the COC matched the requirements of Rule 609. DRO (diesel range organics) and GRO (gasoline range organics) were designated on the COC in place of TPH, a required analysis for Rule 609. No other errors or pertinent information was observed, and no corrections were needed.

Sample Receipt

Samples were received by ALS in four coolers within the temperature range criteria ($4^{\circ}\text{C} \pm 2^{\circ}\text{C}$). Custody seals were intact. No issues were reported on the sample receipt form. No qualifiers were assigned to results based on sample receipt conditions.

Holding Times

All analyses were conducted within recommended holding times, with the exception of lab pH for all samples; WWL designated an "H" qualifier to indicate the results are estimated.

Analytical Methods

The analytical methods used by ALS were checked for consistency with the analytical schedule in the SAP or other pertinent documents. Analytical methods were found to be consistent with the following modifications: Total phosphorous was analyzed using Method 365.2. Gasoline Range Organics (TPH volatiles) were analyzed using Method SW8260_25 Revision C. Diesel Range Organics (TPH extractables) were analyzed according to SW846 8000C and 8015D.

The lab report summary lists the analytic method for total xylenes as Method SW8260_25 Revision C and the analytic method for total nitrate/nitrite as N as EPA 300.0; however, the results are simply calculated by summing the results of the individual isotopes.

Detection Limits

Detection limits provided with the analytical results were compared to the original quoted detection limits from the analytical laboratory. Detection limits were as quoted with no deviations observed except as applied to increased dilution factors.

All samples: all analyzed metals had dilution factors of 10. All other analytes had a dilution factor of 1. ALS reports sample results at the reporting limit (RL) as "undetected" or "U" rather than reporting results as less than the reporting limit, e.g. $< 0.05\text{ug/L}$.

Completeness

Data completeness is a measure of requested analysis and received results. The analytical constituents required under Rule 609 were compared to those analyzed in the laboratory reports. Qualified data are included as analyzed data. No data were rejected for field or analytical reasons. WWL separately designated DRO (Diesel Range Organics) and GRO (Gasoline Range Organics) for the TPH analysis required in Rule 609. All requested analytical data matched the laboratory reported data results; data completeness is considered 100 percent.

Cation-Anion Balance

The cation-anion balance (CAB) calculates the total charge of positively charged ions and the total charge of the negatively charged ions. It is a measure of the quality of the analysis; if the charge is not balanced, an error may exist in the analysis. CAB calculations were performed for each sample; if the CAB exceeded ± 5 percent, i.e. < 95 percent or > 105 %, the analytical results data may be qualified as estimated.

In general, WWL will assign a qualifier (estimated result) for a CAB equal to or greater than plus or minus 10 %, and may assign a qualifier for CAB percentages between plus or minus 5 and less than 10 %. The CAB calculations for the samples are as follows:

- Mitchell 149891: 6.501%
- Schuette 273609: 5.896%
- Firth 112927: 3.663%
- Rice-Well: 2.152%

The analytical results for cations and anions for the samples were not qualified on the basis of the CAB. See Attachment C, Data Quality Review Sheets.

TDS

The ratio of laboratory-measured TDS versus calculated TDS were computed and sample ratios less than 0.80 and greater than 1.20 are cause for a review of major ion reporting errors.

In general, WWL will assign a qualifier (an estimated result) when TDS ratios are less than or equal to 0.5 and 1.5 or greater, and may assign a qualifier for TDS ratios greater than 0.5 and less than 0.8 and greater than 1.2 and less than 1.5. The TDS calculations for samples are as follows:

- Mitchell 149891: 1.21
- Schuette 273609: 1.24
- Firth 112927: 1.24
- Rice-Well: 1.20

No sample results were rejected or qualified on the basis of the TDS acceptance criteria.

Field Duplicates

Field duplicates evaluate the precision of analytical results for field samples collected for a specific sampling event. Precision is measured by the calculation of the relative percent difference (RPD) using the analytical results from the original investigative sample and the duplicate sample. An RPD limit of 35% is used for the data qualification criterion. When the original sample has a detected concentration above the reporting limit (RL) and the concentration of the field duplicate is less than the RL, the calculation of a field duplicate RPD is not applied. For sample results less than 5 times the RL, the acceptance criteria is \pm RL.

No field duplicates were collected for this sampling event, therefore no field duplicate RPDs were calculated.

Trip Blanks

Trip blanks are analyte-free matrix (water in this case) samples supplied by the analytical laboratory that are shipped inside the sample shipping containers to and from the field investigation site. Field blanks test for potential contamination during shipping and sampling field procedures. For this project, field blanks are analyzed for volatiles only.

With the exception of trip blank sample 1310387-2 (associated with sample Rice-Well), there were no detections of volatiles (BTEX) in the analyzed trip blank samples. As stated by ALS, *“The results for 1310387-2 (Trip Blank) indicate GRO in the sample. Further scrutinizing of the chromatogram for this sample revealed the presence of non-target peaks which were later identified as artifacts likely produced in the VOC vial (septa) manufacturing process. The vendor was contacted, and the contamination documented. There were no unique identifiers common to gasoline in the sample. No further action was taken.”*

As a result of the above investigation of the detections in trip blank sample 1310387-2 and no detections of volatiles in the associated investigative sample, the trip blank results were qualified as “R”, a rejected result.

Laboratory Quality Control

The analytical laboratory conducts an extensive quality control program and as part of the overall quality control process, WWL verified that the lab performed and reported quality control data correctly. This included checking laboratory control samples for laboratory acceptance criteria of ± 20 percent and reviewing percent recoveries of analytical spike and analytical spike duplicates and other control samples. Typical percent recovery acceptance limits are 80 to 120 percent for wet chemistry and 70 to 130 percent for metals. Typical percent recovery acceptance limits are within the 70 to 130 percent range. All sampling event data packages from the lab showed that no laboratory control samples exceeded the 20 percent criteria without data qualification.

All laboratory quality control standards were met within the established laboratory acceptance criteria.

Accuracy

Accuracy was evaluated as a percent recovery of an analyte in a reference standard or a spiked sample, e.g. matrix spike and matrix spike duplicate. In cases where percent recoveries exceeded the laboratory acceptance criteria, data would be qualified depending on whether the analyte was detected above the method detection limit or not, if the recovery of the associated control sample was acceptable, or if the analyte concentration in the sample was disproportionate to the spike level and that the recovery of the associated control sample was acceptable. Note that the analytical laboratory may not have selected a sample from this field investigation for testing matrix quality control samples. In these cases, true matrix affects cannot be assessed and the resulting data should be considered as estimated. This will be noted in the DQR sheets (Attachment C), but the data is not qualified by WWL.

The matrix spike and matrix spike duplicate recoveries could not be evaluated for sodium or strontium in sample Firth 112927; the concentration of these analytes exceeded the matrix spike added during digestion by greater than four times, and recoveries may not be accurate. However, the laboratory control sample indicates that the digestion and analyses were within control limits. No qualifiers were assigned by the laboratory because of percent recoveries exceeding the laboratory acceptance criteria.

Precision

Precision is the measurement of how closely replicate sample constituents agree and is not related to the true value (concentration). Precision is measured using RPD calculations for laboratory duplicate samples. The RPDs were compared to the laboratory acceptance limit of 20 percent. RPDs were not

used when the sample concentration was too low (< 10X MDL) for accurate evaluation. No qualifiers were assigned by the laboratory because of RPD values exceeding the laboratory acceptance criteria. Data Quality Review Sheets are presented in Attachment C.

Summary

ALS Laboratories assigned analytical results that were undetected with a “U” qualifier, and results that fell above the method detection limit but below the reporting limit with a “J” to indicate the results are estimated. WWL assigned an “H” qualifier for analyses performed outside of analytic holding times to indicate the results are estimated, and an “R” qualifier to indicate the data is rejected. See Attachment C for individual parameters that were qualified.

ANALYTICAL RESULTS

Laboratory analysis was performed by ALS Environmental (ALS), in Fort Collins, Colorado, in accordance with the analytical schedule described in Rule 609. The analytical results are summarized in Attachment D; the data are qualified as indicated. The full laboratory analytical report is presented in Attachment E. A geochemical interpretation of the analytical results can be provided upon request.

If you have any questions or concerns, please contact me at (970) 242-0170.

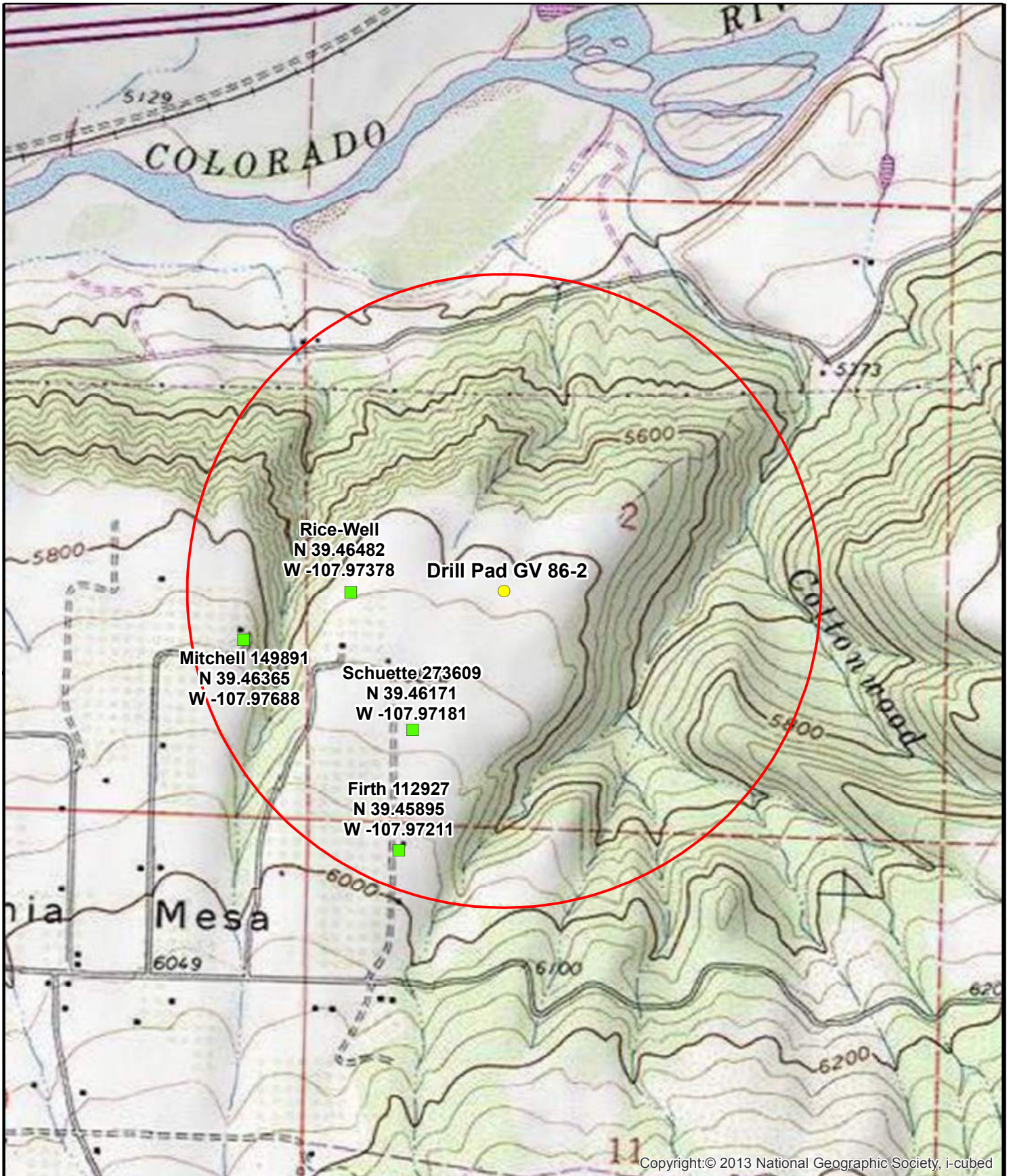
Sincerely,



Bruce D. Smith
Principal Hydrogeologist
WESTERN WATER & LAND, INC.

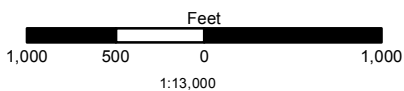
Attachments

- Figure 1- Sampling Location Map
- Attachment A - Photographs
- Attachment B - Field Monitoring Forms
- Attachment C - Data Quality Review Sheets
- Attachment D - Summary of Analytical Results
- Attachment E - Laboratory Analytical Summary Report



Legend

- Sample Location(s)
- Drill Pad GV 86-2
- 0.5-Mile Radius Evaluation Area



**Figure 1: Drill Pad GV 86-2 Sample Locations
NE1/4, SW1/4, S2, T7S, R95W, 6 PM**

Garfield County, Colorado

WPX Energy Rocky Mountain LLC

Basemap Source: Esri ArcGIS Online



Western Water & Land, Inc.
Applications in Earth Science

ATTACHMENT A

Photographs



Photo 1. Mitchell Well Sampling Location (GV 86-2 Mitchell 149891)



Photo 2. Mitchell Well (GV 86-2 Mitchell 149891)



Photo 3. Schuette Well Sampling Location (GV 86-2 Schuette-273609)



Photo 4. Schuette Well (GV 86-2 Schuette-273609)



Photo 5. Firth Well Sampling Location (GV 86-2 Firth 112927)



Photo 6. Firth Well (GV 86-2 Firth 112927)



Photo 7. Rice Well Sampling Location (GV 86-2 Rice-Well)



Photo 8. Rice Well (GV 86-2 Rice-Well)

ATTACHMENT B

Field Monitoring Forms

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	Baseline
Site Name (Well Pad):	GV 86-2	Site API:	05-045-06703
Station Name:	FIRTH 112927	Sample Date:	10-21-13
COGCC Facility ID:	703063	Start Time:	0920
Field Sample ID:	Firth	End Time:	1011
Landowner Name:	Samuel Firth	Sample Time:	0942
Landowner Address:	3739 CR 301, Parachute, CO	Sample Team:	SLG, NWS
Water Right/Well Owner:	Samuel Firth	Observer:	NWS
Water Right/Well Permit:	112927	Lead Signature/Date:	<i>[Signature]</i> 10-29-13
Receipt Number:	0201820		

Station Information				
Station Description: Hose bib by well				
Approximate Distance to Well Pad:				
Station Type: <u>Well</u> / Spring / Seep / Other:		Water Use: <u>Domestic</u> / Irrigation /		
Sampling Location: Kitchen Tap / Pipe / Well House / <u>Hose bib</u> / Other:				
GPS Location: Zone <u> </u> x <u>39.45895</u> y- <u>107.97211</u> z <u> </u>				
Total Depth (ft):	<u>180</u>	Static Depth to Water (ft):	<u>NM</u>	Well diameter (in): <u>8</u>
Purge Volume (gal)	<u>40 gal purged</u>			

Weather Conditions	
Sky: <u>Clear</u> / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F): <u>40</u> °F
Precipitation: <u>None</u> / Light / Moderate / Heavy	Precip Type: <u>None</u> / Rain / Sleet / Hail / Snow
Wind: <u>Calm</u> / Light / Mod / Strong	Wind Speed/Direction: <u>0</u>

Field Measurements							
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	<u>12.29</u>	<u>1006</u>		<u>YSI 556</u>	<u>Container</u>	
pH	s.u.	<u>7.29</u>	↓		↓	↓	
Sp. Conductivity	uS/cm	<u>648</u>					
Conductivity	uS/cm	<u>492</u>					
DO Saturation	%	<u>64.8</u>					
DO	mg/L	<u>6.87</u>					
Baro Press	mmHg	<u>604.1</u>					
ORP	RmV	<u>221.0</u>					
Turbidity	NTU	<u>9.26</u>			<u>micro TP</u>		<u>10.13, 9.55, 8.10</u>
Discharge	<u>gpm</u>	<u>4.2</u>	<u>0930</u>		<u>bucket + watch</u>		
H2S	mg/L						
Color:		<u>Clear</u> / White / Yellow / Brown / Green / Blue / Other			Light / Med / Dark		
Odor:		<u>None</u> / Mild / Mod / Strong					
Effervescence:		<u>None</u> / Mild / Mod / Strong			Bubbles: <u>None</u> / Low / Mod / High		
Sediment:		<u>None</u> / Light / Mod / Heavy			VOA Headspace: <u>None</u> / ≤ Pea Size / ≥ Pea Size		
Lab Analysis:		<u>Rule 609</u> / COA 9 / COA 22 / Other					
Field Filtered:		<u>Yes</u> / No		Filter Size: <u>NA</u>	No. Filters used: <u>NA</u>		

Flag Codes: NM (not measured), J (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

Says that their well isn't in great operating condition - if it runs too long it brings sediment up + plugs all of the household appliances (sink, dish washer, washer, etc.) with sediment. We told the landowner we will not run it for more than 10 minutes before sample to prevent this. She has had the well running since learn for a period of time. She was okay with our 10 min plan.

Additional information:

Discharge:

2.5 gal / 34.9 sec = 4.3 gpm

Wellpoint #6

Only purged for 10 min.; parameters almost 100% stabilized to criteria. No signs of heavy sediment like the landowner reports after discharging too long.

Gary Reed present for sample, Rochelle Firth present.

Calibration Information			Date: 10-21-13	Location: Office				
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
ysi 550	pH	s.u.	0711	7.00	22.26	7.00	7.00	
	pH	s.u.	0714	10.01	22.21	9.99	10.01	
	pH	s.u.	0716	4.01	22.06	3.96	4.00	
	SpC	uS/cm	0720	2070	22.12	2050	2070	
	SpC	uS/cm	0724		21.72	8612		643.5 mmHg
	DO	%						
	DO	%						
	ORP	RmV						
micro TP	Turbidity	NTU	0721					

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	Baseline
Site Name (Well Pad):	GV 86-2	Site API:	05-045-06703
Station Name:	Mitchell Water Well	Sample Date:	10-16-13
COGCC Facility ID:	7046071	Start Time:	1010
Field Sample ID:	Mitchell 149891	End Time:	1300
Landowner Name:	Orley Mitchell	Sample Time:	1235
Landowner Address:	656 CR 340, Perrechat, CO	Sample Team:	SLG, NWS
Water Right/Well Owner:	Orley Mitchell	Observer:	SLG
Water Right/Well Permit:	149891	Lead Signature/Date:	<i>[Signature]</i> 10-29-13
Receipt Number:	0281675		

Station Information			
Station Description: Hose bib near front door			
Approximate Distance to Well Pad: 2210 ft			
Station Type: <input checked="" type="radio"/> Well / <input type="radio"/> Spring / <input type="radio"/> Seep / <input type="radio"/> Other:		Water Use: <input checked="" type="radio"/> Domestic / <input type="radio"/> Irrigation /	
Sampling Location: Kitchen Tap / Pipe / Well House / <input checked="" type="radio"/> Hose bib / Other:			
GPS Location: Zone NM x 39.40305 y 107.97688 z — 4'			
Total Depth (ft):	200 ft	Static Depth to Water (ft):	145 N/A
Purge Volume (gal)	total = 557		Well diameter (in): 6" ± 4"
	7 volumes = 565		

Weather Conditions	
Sky: <input checked="" type="radio"/> Clear / <input type="radio"/> Scattered / <input type="radio"/> Cloudy / <input type="radio"/> Overcast	Estimated Air Temp (deg F): 40
Precipitation: <input checked="" type="radio"/> None / <input type="radio"/> Light / <input type="radio"/> Moderate / <input type="radio"/> Heavy	Precip Type: <input type="radio"/> None / <input type="radio"/> Rain / <input type="radio"/> Sleet / <input type="radio"/> Hail / <input type="radio"/> Snow
Wind: <input checked="" type="radio"/> Calm / <input type="radio"/> Light / <input type="radio"/> Mod / <input type="radio"/> Strong	Wind Speed/Direction: NA 10'

Field Measurements							
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	10.59	1250		YSI 556	<input checked="" type="checkbox"/> Container	
pH	s.u.	7.88					
Sp. Conductivity	uS/cm	571					
Conductivity	uS/cm	414					
DO Saturation	%	63.8					
DO	mg/L	7.04					
Baro Press	mmHg	614.1					
ORP	RmV	185.9					
Turbidity	NTU	27.95		AV	Micro TP		27.31, 28.75, 27.78
Discharge	gpm	0	1020	J	5 gal bucket		
H2S	mg/L	NM					
Color: <input checked="" type="radio"/> Clear / <input type="radio"/> White / <input type="radio"/> Yellow / <input type="radio"/> Brown / <input type="radio"/> Green / <input type="radio"/> Blue / <input type="radio"/> Other <input checked="" type="radio"/> Light / <input type="radio"/> Med / <input type="radio"/> Dark							
Odor: <input checked="" type="radio"/> None / <input type="radio"/> Mild / <input type="radio"/> Mod / <input type="radio"/> Strong							
Effervescence: <input type="radio"/> None / <input checked="" type="radio"/> Mild / <input type="radio"/> Mod / <input type="radio"/> Strong				Bubbles: <input checked="" type="radio"/> None / <input type="radio"/> Low / <input type="radio"/> Mod / <input type="radio"/> High			
Sediment: <input type="radio"/> None / <input checked="" type="radio"/> Light / <input type="radio"/> Mod / <input type="radio"/> Heavy				VOA Headspace: <input checked="" type="radio"/> None / <input type="radio"/> ≤ Pea Size / <input type="radio"/> ≥ Pea Size			
Lab Analysis: <input checked="" type="radio"/> Rule 609 / <input type="radio"/> COA 9 / <input type="radio"/> COA 22 / <input type="radio"/> Other							
Field Filtered: Yes / <input checked="" type="radio"/> No		Filter Size: NA		No. Filters used: None			

Flag Codes: NM (not measured), J (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

Has small amounts of sediment, No filter or treatment before use.

Gary Reed present for sample

Additional information:

Discharge $5 \text{ gal} / 45.1 \text{ sec} = 6.65 \text{ gpm} = 6 \text{ gpm}$
 $5 \text{ gal} / 58.21 \text{ sec} = 5.15 \text{ gpm}$

At purge #8 \Rightarrow water level below pump. Pump ~ 145
 1131 = 150.51 ft \Rightarrow let it recharge
 1139 = 141.51

Water level after sample (1250) = 139.59

Parameters wouldn't stabilize, purged close to 7 casing volumes + took sample, according to SAP.

Calibration Information			Date: 10-16-13			Location: Office		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI 556	pH	s.u.	834	7.00	21.33	7.05	7.00	
	pH	s.u.	837	10.01	21.30	10.01	10.01	
	pH	s.u.	839	4.01	21.33	4.02	4.01	
YSI 556	SpC	uS/cm	831	8974	21.28	8703	8974	
	SpC	uS/cm						
YSI 556	DO	%	850			83.3		644.1 mmHg
	DO	%						
	ORP	RmV						
micro TP	Turbidity	NTU	1010					

WPX BWQ Groundwater Monitoring Field Form

Well Purging Information		
Date: 10-16-13	Purge Method: Parameters Stabilization	
Total Depth, ft (d _t): 200	Static Depth to Water, ft (d _w): 145 145	Sample/Set Depth (ft): 170
Bore Radius (in): 3	Bore Volume (ft ³): Q	Casing Radius (in): 4" = diameter
Total Volume (gal or ft ³): 150 gal 35 gal	Total Volume x 3 (gal or ft ³): 450 105 gal	

1 ft³ = 7.48 gal

Bore Volume = $\pi r^2 (d_t - d_w) (\pi (0.16)^2) (200 - 145) = (0.080)(55) = 4.4$

Discharge = 6 gpm

4.4 x 7.48 = 32.91

Purge #	Time	pH (s.u.)	SpC (uS/cm)	Cond (uS/cm)	DO (%)	DO (mg/L)	ORP (RmV)	Water Clarity (Poor/Mod/Good)	Effervescence (None/Slight/Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)	
1	1040	7.55										
1	1030	4.83	557	394	56.2	6.35	357.0	good	2.84	60	60	
2	1045	7.103	552	394	55.8	6.22	252.1	good	0.73	35	95	145.3
3	1050	7.73	553	395	58.7	6.55	233.7	good	4.24	35	130	148.79
4	1055	7.79	560	400	63.5	7.13	216.5	mod	63.29	35	165	
5	1100	7.163	554	397	60.7	6.74	271.1	mod	47.47	35	200	
6	1105	7.74	564	403	66.2	7.31	206.0	mod	176.4	35	235	
7	1110	7.43	562	404	68.8	7.55	209.2	mod	176.2	35	270	
8	1119	7.90	567	409	66.0	7.32	194.7	mod	112.1	55	325	165
9	1150	7.88	566	416	67.2	7.33	190.7	mod/g	107.5	18	343	
10	1153	7.96	574	411	62.1	6.94	186.5	better	43.77	18	361	
11	1156	7.93	569	407	61.5	6.87	186.6	good	30.43	18	379	
12	1159	7.92	566	406	61.7	6.85	186.8	good	24.76	18	397	
13	1203	7.91	555	396	59.5	6.63	185.6	good	12.68	24	415	
14	1207	7.96	558	403	56.9	6.29	184.8	good	15.53	18	433	
15	1210	7.91	558	399	60.3	6.60	183.1	good	12.82	18	451	
16	1213	7.89	556	404	59.6	6.46	181.5	good	15.28	18	469	
17	1216	7.91	560	400	62.1	6.97	177.4	good	11.61	18	487	
18	1219	7.92	561	402	58.7	6.57	172.6	good	13.33	18	505	
19	1222	7.90	562	402	63.0	7.06	177.7	good	15.68	18	523	
20	1225	7.90	563	403	63.1	7.04	179.5	good	13.25	18	541	
21	1228	7.89	563	402	64.6	7.22	181.1	good	11.11	18	559	
22												
23												
24												

505-7

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX Courtesy BWQ	Sample Purpose:	Courtesy BASELINE
Site Name (Well Pad):	GV 86-2	Site API:	05-045-06703
Station Name:	Rice, John	Sample Date:	10-22-13
COGCC Facility ID:	703035	Start Time:	1251
Field Sample ID:	Rice-Well	End Time:	1534
Landowner Name:	John Rice	Sample Time:	1508
Landowner Address:	697 CR 355, Parachute, CO	Sample Team:	NWS
Water Right/Well Owner:	John Rice	Observer:	NWS
Water Right/Well Permit:	100326	Lead Signature/Date:	_____ 10-29-13
Receipt Number:	0094778		

Station Information			
Station Description: Hydrant to west of house			
Approximate Distance to Well Pad: 1,280 ft			
Station Type:	Well / Spring / Seep / Other:		Water Use: Domestic / Irrigation /
Sampling Location:	Kitchen Tap / Pipe / Well House / Hose bib / Other: Hydrant		
GPS Location:	Zone	x -107.97378 y 39.46482 z 5856	
Total Depth (ft):	Q	Static Depth to Water (ft):	Q Well diameter (in): Q
Purge Volume (gal)	304.5		

Weather Conditions	
Sky:	Clear / Scattered / Cloudy / Overcast Estimated Air Temp (deg F): 55
Precipitation:	None / Light / Moderate / Heavy Precip Type: None / Rain / Sleet / Hail / Snow
Wind:	Calm / Light / Mod / Strong Wind Speed/Direction: _____

Field Measurements							
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	11.66	1521		Ysi 556	Container	
pH	s.u.	7.82					
Sp. Conductivity	uS/cm	677					
Conductivity	uS/cm	505					
DO Saturation	%	66.7					
DO	mg/L	7.14					
Baro Press	mmHg	618.0					
ORP	RmV	209.1					
Turbidity	NTU	1.68			Micro TPI		
Discharge	gpm	15	1323	J	5gal bucket		
H2S	mg/L	NM					

Color:	Clear / White / Yellow / Brown / Green / Blue / Other	Light / Med / Dark
Odor:	None / Mild / Mod / Strong	
Effervescence:	None / Mild / Mod / Strong	Bubbles: None / Low / Mod / High
Sediment:	None / Light / Mod / Heavy	VOA Headspace: None / ≤ Pea Size / ≥ Pea Size

Lab Analysis:	Rule 609 / COA 9 / COA 22 / Other	Courtesy - same as Rule 609
Field Filtered:	Yes / No	Filter Size: N/A No. Filters used: _____

Flag Codes: NM (not measured), J (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

John mentioned he has lost water since last summer.

Additional information:

1323 Discharge 5gal / 19.9 sec ~ 15gpm
 1332 Discharge 5gal / 25.3 sec - spurting ~ 12 gpm
 1333 Almost no flow
 1334 Kicked back on for ~ 5gal then almost no flow
 1335 Pumped dry - will slow discharge for purging
 1351 5gal / 45 sec ~ 6.6 gpm

Parameters stable except ORP which is ± 13 mV instead of ± 10 mV.

Calibration Information			Date: <u>10-22-13</u>		Location: <u>Office</u>			
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI 556	pH	s.u.	734	7.00	22.33	7.02	7.00	
	pH	s.u.	740	10.01	22.48	10.00	10.01	
	pH	s.u.	748	4.01	22.47	3.99	4.01	
	SpC	uS/cm	727	2070	22.38	2077	2070	
	SpC	uS/cm		646				
	DO	%	802	646.3 mV	22.14	83.0	85.1	
	DO	%						
	ORP	RmV						
MicroTPI	Turbidity	NTU	811					

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	Baseline
Site Name (Well Pad):	GV #6-2	Site API:	05-045-06703
Station Name:	Schuetz Schuetz 273609	Sample Date:	10-17-13
COGCC Facility ID:	752941	Start Time:	1005
Field Sample ID:	Schuetz-273609	End Time:	1253
Landowner Name:	Mark Schuetz	Sample Time:	1216
Landowner Address:	70 Rampart Pl, Parachute, CO	Sample Team:	NWS
Water Right/Well Owner:	Mark Schuetz	Observer:	NWS
Water Right/Well Permit:	273609	Lead Signature/Date:	<i>[Signature]</i> 10-29-13
Receipt Number:	9502790		

Station Information			
Station Description: Hydrant behind barn			
Approximate Distance to Well Pad: 1390 ft			
Station Type:	Well / Spring / Seep / Other:	Water Use:	Domestic / Irrigation /
Sampling Location: Kitchen Tap / Pipe / Well House / Hose bib / Other: Hydrant			
GPS Location:	Zone	x 107.97181	y 39.4671 z 6046 ft
Total Depth (ft):	265	Static Depth to Water (ft):	120 NM Well diameter (in): 5.5
Purge Volume (gal)	615		

Weather Conditions	
Sky:	Clear / Scattered / Cloudy / Overcast Estimated Air Temp (deg F): 45
Precipitation:	None / Light / Moderate / Heavy Precip Type: None / Rain / Sleet / Hail / Snow
Wind:	Calm / Light / Mod / Strong Wind Speed/Direction: <i>[Symbol]</i>

Field Measurements							
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	12.50	1029		X1556	Container	
pH	s.u.	7.16					
Sp. Conductivity	uS/cm	757					
Conductivity	uS/cm	576					
DO Saturation	%	54.4					
DO	mg/L	5.75					
Baro Press	mmHg	611.7					
ORP	RmV	97.1					
Turbidity	NTU	4.90		AV	MicroTPI		4.94 4.68, 5.07
Discharge	gpm	10	1015	J	5gal Bucket		5gal/27.4sec
H2S	mg/L	NM					

Color:	Clear / White / Yellow / Brown / Green / Blue / Other	Light / Med / Dark
Odor:	None / Mild / Mod / Strong	
Effervescence:	None / Mild / Mod / Strong	Bubbles: None / Low / Mod / High
Sediment:	None / Light / Mod / Heavy	VOA Headspace: None / ≤ Pea Size / ≥ Pea Size

Lab Analysis:	Rule 609 / COA 9 / COA 22 / Other
Field Filtered:	Yes / No Filter Size: N/A No. Filters used: 0

Flag Codes: NM (not measured), J (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

None

Additional information:

Calibration Information			Date: <u>10-17-13</u>			Location: <u>Office</u>		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
<u>Ysi 556</u>	pH	s.u.	<u>737</u>	<u>7.00</u>	<u>22.22</u>	<u>7.02</u>	<u>7.00</u>	
	pH	s.u.	<u>739</u>	<u>10.01</u>	<u>22.19</u>	<u>10.00</u>	<u>10.01</u>	
	pH	s.u.	<u>742</u>	<u>4.01</u>	<u>22.18</u>	<u>4.00</u>	<u>4.01</u>	
	SpC	uS/cm	<u>725</u>	<u>8974</u>	<u>22.18</u>	<u>5324</u>		<u>Cancelled Cal</u>
	SpC	uS/cm	<u>734</u>	<u>8974</u>	<u>22.16</u>	<u>8982</u>	<u>8974</u>	
	DO	%	<u>756</u>		<u>22.22</u>	<u>85.8</u>	<u>84.6</u>	<u>643.1 mmHg</u>
	DO	%						
	ORP	RmV						
<u>740</u>	Turbidity	NTU	<u>740</u>					

Micro Tpl

WPX BWQ Groundwater Monitoring Field Form

Well Purging Information

Date: 10-17-13	Purge Method: Stable Parameters		
Total Depth, ft (d _t): 265	Static Depth to Water, ft (d _w): 120 NM	Sample/Set Depth (ft): Q	
Bore Radius (in): 3.25	Bore Volume (ft ³): ⑤	Casing Radius (in): 2.75	
Total Volume (gal or ft ³): 249.46		Total Volume x 3 (gal or ft ³): 748.38	

1 ft³ = 7.48 gal

$$\text{Bore Volume} = \pi r^2 (d_t - d_w) = \pi (3.25)^2 (265 - 120) = 0.23 (145) = 33.35 \text{ ft}^3 = 249.46 \text{ gal}$$

$$33.17 (145) = 4,809.65$$

12:17
 12:18
 12:24
 12:24
 12:24
 12:25
 12:33
 12:30
 12:33
 12:33
 12:33
 12:35
 12:45
 12:47
 12:46
 12:44
 12:50
 12:50
 12:50

Purge #	Time	pH (s.u.)	SpC (uS/cm)	Cond (uS/cm)	DO (%)	DO (mg/L)	ORP (RmV)	Water Clarity (Poor/Mod / Good)	Effervescence (None / Slight / Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)
1	1035	7.03	744	569	27.8	2.95	156.8	23.32	None	35	35
2	1038	6.92	746	566	29.8	3.16	143.6	20.13	None	30	65
3	1041	6.95	747	566	33.1	3.50	109.2	14.48	None	30	95
4	1044	6.97	746	565	33.6	3.58	77.8	15.28	None	30	125
5	1047	6.99	744	564	36.3	3.87	47.2	14.70	None	30	155
6	1050	7.10	743	563	36.1	3.81	28.5	16.79	None	30	185
7	1053	7.17	745	565	44.0	4.68	14.3	18.20	None	30	205
8	1056	7.22	749	568	44.1	4.63	4.1	21.83	None	30	235
9	1059	7.27	753	572	46.5	4.91	-1.8	32.70	None	30	265
10	1102	7.29	755	573	50.0	5.31	-5.4	62.48	None	30	295
11	1105	7.29	755	573	51.6	5.48	-4.0	60.16	None	30	325
12	1108	7.31	756	575	53.3	5.66	-5.4	65.41	None	30	355
13	1111	7.32	757	576	55.2	5.77	-1.8	82.15	None	30	385
14	1115	7.34	758	577	59.6	6.31	1.6	99.14	None	30	415
15	1118	7.34	760	578	61.2	6.50	14.1	61.54	None	30	445
16	1121	7.35	761	580	61.8	6.53	20.7	86.84	None	30	475
17	1124	7.34	762	579	66.1	7.00	22.1	185.9	None	20	465
18	1126	Pumped dry, no parameters taken								20	465
19	1157	7.37	789	584	59.0	6.18	55.0	20.16	None	30	495
20	1200	7.39	764	583	64.2	6.77	57.1	7.35	None	30	525
21	1203	7.38	765	583	65.2	6.90	60.8	6.57	None	30	555
22	1206	7.36	766	584	64.3	6.80	65.4	5.32	None	30	585
23	1209	7.35	766	584	62.8	6.64	65.0	6.10	None	30	615

57/100

1746.22

ATTACHMENT C

Data Quality Review Sheets

DATA QUALITY REVIEW SHEET

Facility ID:	703063	Project:	BWQ: GV 86-2
Station Name:	Firth 112927	Lab Work Order:	1310347-1
Sample Date:	10/21/13	QA/QC Review Date:	12-11-13
Field Sample ID:	Firth 112927	Reviewer:	J. Pahler

Field Sampling Data Review	Yes	No	N/A
1. Well properly purged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Flow rate reduced prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water quality parameters stable prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Sampling methods performed according to SAP procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Procedures consistent with obtaining a representative sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Any discrepancies noted on the lab receipt form? <i>If yes, list in the comments section.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. All samples analyzed for the requested analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Proper laboratory methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. All sample holding times met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was a field investigation sample used by the lab for matrix QC for all analyses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Lab qualifiers for data (other than non-detect)? <i>List in comments.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are corrective actions required? <i>If yes, please list actions and dates to be completed by:</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Corrective Action</i>	<i>Date to be completed</i>		

Calculated Parameters	Calculated Value	Lab Value	Ratio/Percent Difference	Acceptable Limit	Meets QC Criteria?
Cation/Anion Balance, % (CAB)	3.663	4.613		±5%	<input type="checkbox"/>
Total Dissolved Solids, mg/L (TDS)	481	390	1.24	0.8 – 1.2	<input type="checkbox"/>
Specific Conductance, µS/cm (SpC)	582	635	0.92	0.8 – 1.2	<input type="checkbox"/>

Comments:

Well only purged 10 minutes at request of well owner. VOC Analysis: LCS and LCSD used instead of MS and MSD due to insufficient sample. GRO was detected in the Trip Blank between the MDL and RL; lab qualified result with "J" to indicate estimated value. Metals: matrix spike recoveries could not be evaluated for sodium and strontium in the MS and MSD due to concentrations in native sample being greater than four times the amount of spike added. Method for TDS analyses incorrectly entered as EPA 160.1; was actually SM 4500C. Field sample had moderate effervescence and contained small headspace >pea size, but not present when received at laboratory. Because the lab did not select a field investigation sample from this job for matrix QC for inorganics, the similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC. Lab pH analyzed out of holding time; WWL qualified with "H" to indicate results estimated.

DATA QUALITY REVIEW SHEET

Facility ID:	704671	Project:	BWQ: GV 86-2
Station Name:	Mitchell Water Well	Lab Work Order:	1310292-1
Sample Date:	10/16/13	QA/QC Review Date:	11/22/13
Field Sample ID:	Mitchell 149891	Reviewer:	J. Pahler

Field Sampling Data Review	Yes	No	N/A
1. Well properly purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Flow rate reduced prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water quality parameters stable prior to sampling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Sampling methods performed according to SAP procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Procedures consistent with obtaining a representative sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Any discrepancies noted on the lab receipt form? <i>If yes, list in the comments section.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. All samples analyzed for the requested analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Proper laboratory methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. All sample holding times met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was a field investigation sample used by the lab for matrix QC for all analyses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Lab qualifiers for data (other than non-detect)? <i>List in comments.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are corrective actions required? <i>If yes, please list actions and dates to be completed by:</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Corrective Action</i>	<i>Date to be completed</i>		

Calculated Parameters	Calculated Value	Lab Value	Ratio/Percent Difference	Acceptable Limit	Meets QC Criteria?
Cation/Anion Balance, % (CAB)	6.501	6.777		±5%	<input type="checkbox"/>
Total Dissolved Solids, mg/L (TDS)	424	350	1.21	0.8 – 1.2	<input type="checkbox"/>
Specific Conductance, µS/cm (SpC)	522	570	0.92	0.8 – 1.2	<input type="checkbox"/>

Comments:

Field parameters not stabilized after purging 7 casing volumes. Sample collected according to SAP procedures. The lab did not select a field investigation sample from this job for matrix QC for metals and inorganics. The similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

Lab pH analyzed out of holding time; WWL qualified with "H" to indicate results estimated.

DATA QUALITY REVIEW SHEET

Facility ID:	703035	Project:	BWQ: GV 86-2
Station Name:	Rice, John	Lab Work Order:	1310387-1
Sample Date:	10/22/13	QA/QC Review Date:	11-22-13
Field Sample ID:	Rice-Well	Reviewer:	J. Pahler

Field Sampling Data Review	Yes	No	N/A
1. Well properly purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Flow rate reduced prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water quality parameters stable prior to sampling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Sampling methods performed according to SAP procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Procedures consistent with obtaining a representative sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Any discrepancies noted on the lab receipt form? <i>If yes, list in the comments section.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. All samples analyzed for the requested analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Proper laboratory methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. All sample holding times met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was a field investigation sample used by the lab for matrix QC for all analyses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Lab qualifiers for data (other than non-detect)? <i>List in comments.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are corrective actions required? <i>If yes, please list actions and dates to be completed by:</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Corrective Action</i>	<i>Date to be completed</i>		

Calculated Parameters	Calculated Value	Lab Value	Ratio/Percent Difference	Acceptable Limit	Meets QC Criteria?
Cation/Anion Balance, % (CAB)	2.152	3.317		±5%	<input checked="" type="checkbox"/>
Total Dissolved Solids, mg/L (TDS)	492	410	1.24	0.8 – 1.2	<input type="checkbox"/>
Specific Conductance, µS/cm (SpC)	612	665	0.92	0.8 – 1.2	<input checked="" type="checkbox"/>

Comments:

Field parameters stable with the exception of ORP (± 13 mv). Analytic method for TDS was incorrectly entered in EDD as EPA 160.1; actual method used was SM 4500C. GRO was detected in the Trip Blank at 260 ug/L; lab investigation revealed contamination in the sample from the VOC vial (septa) manufacturing process. WWL rejected the data and qualified with an "R". LCS and LCSD were used instead of MS and MSD for VOCs due to insufficient sample. The lab did not select a field investigation sample from this job for matrix QC for metals and inorganics. The similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

Lab pH analyzed out of holding time; WWL qualified with "H" to indicate results estimated.

DATA QUALITY REVIEW SHEET

Facility ID:	752941	Project:	BWQ: GV 86-2
Station Name:	Schuette 273609	Lab Work Order:	1310307-1
Sample Date:	10/17/13	QA/QC Review Date:	11/22/13
Field Sample ID:	Schuette-273609	Reviewer:	J. Pahler

Field Sampling Data Review	Yes	No	N/A
1. Well properly purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Flow rate reduced prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water quality parameters stable prior to sampling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Sampling methods performed according to SAP procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Procedures consistent with obtaining a representative sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Any discrepancies noted on the lab receipt form? <i>If yes, list in the comments section.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. All samples analyzed for the requested analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Proper laboratory methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. All sample holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was a field investigation sample used by the lab for matrix QC for all analyses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Lab qualifiers for data (other than non-detect)? <i>List in comments.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are corrective actions required? <i>If yes, please list actions and dates to be completed by:</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Corrective Action</i>	<i>Date to be completed</i>		

Calculated Parameters	Calculated Value	Lab Value	Ratio/Percent Difference	Acceptable Limit	Meets QC Criteria?
Cation/Anion Balance, % (CAB)	5.896	6.26	1.06	±5%	<input type="checkbox"/>
Total Dissolved Solids, mg/L (TDS)	568	460	1.24	0.8 – 1.2	<input type="checkbox"/>
Specific Conductance, µS/cm (SpC)	687	758	0.91	0.8 – 1.2	<input type="checkbox"/>

Comments:

VOC Analysis: LCS and LCSD used instead of MS and MSD due to insufficient sample. The lab did not select a field investigation sample from this job for matrix QC for DRO, metals, and some inorganics. The similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

Lab pH analyzed out of holding time; WWL qualified with "H" to indicate results estimated.

ATTACHMENT D

Summary of Analytical Results

Rule 609 BWQ Analytical Results Summary: Well Pad GV 86-2																													
Station Name			Firth 112927							Mitchell Water Well							Rice, John							Schuette 273609					
Facility ID			703063							704671							703035							752941					
Sample Date			10/21/2013 9:42							10/16/2013 12:35							10/22/2013 15:08							10/17/2013 12:16					
Field Sample ID			Firth 112927							Mitchell 149891							Rice-Well							Schuette-273609					
Lab Sample ID			1310347-1							1310292-1							1310387-1							1310307-1					
	Reporting Units	Analytic Method	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF			
Inorganics																													
Alkalinity AS CaCO3, Total	mg/l	SM2320B	330			20		1	280			20		1	330			20		1	390			20		1			
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B	330			20		1	280			20		1	330			20		1	390			20		1			
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B	20	U		20		1	20	U		20		1	20	U		20		1	20	U		20		1			
Bromide	mg/l	EPA300.0	0.2	U		0.2	0.06	1	0.2	U		0.2	0.06	1	0.2	U		0.2	0.06	1	0.2	U		0.2	0.06	1			
Chloride	mg/l	EPA300.0	6.5			0.2	0.06	1	2.7			0.2	0.06	1	11			0.2	0.06	1	4.5			0.2	0.06	1			
Fluoride	mg/l	EPA300.0	0.25			0.1	0.03	1	0.4			0.1	0.03	1	0.2			0.1	0.03	1	0.21			0.1	0.03	1			
Nitrate as N	mg/l	EPA300.0	1.3			0.2	0.06	1	0.89			0.2	0.06	1	0.72			0.2	0.06	1	1.8			0.2	0.06	1			
Nitrate/Nitrite as N	mg/l	Calculation	1.3			0.1		1	0.89			0.1		1	0.72			0.1		1	1.8			0.1		1			
Nitrite as N	mg/l	EPA300.0	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1			
pH	s.u.	SM4500-H	7.88		H	0.1		1	8.14		H	0.1		1	8.05		H	0.1		1	7.91		H	0.1		1			
Specific Conductivity	umhos/cm	SM2510B	635			1		1	570			1		1	665			1		1	758			1		1			
Sulfate	mg/l	EPA300.0	20			1	0.3	1	34			1	0.3	1	13			1	0.3	1	33			1	0.3	1			
Total Dissolved Solids	mg/l	SM2540C	390			20		1	350			20		1	410			20		1	460			20		1			
Total Phosphorous	mg/l	EPA365.2	0.05	U		0.05	0.015	1	0.066			0.05	0.015	1	0.05	U		0.05	0.015	1	0.05	U		0.05	0.015	1			
Dissolved Metals																													
Barium	ug/l	EPA200.8	92			1	0.3	10	41			1	0.3	10	79			1	0.3	10	120			1	0.3	10			
Boron	ug/l	EPA200.8	110			50	15	10	72			50	15	10	130			50	15	10	78			50	15	10			
Calcium	ug/l	EPA200.8	26000			1000	65	10	15000			1000	65	10	12000			1000	65	10	39000			1000	65	10			
Iron	ug/l	EPA200.8	100	U		100	30	10	100	U		100	30	10	100	U		100	30	10	100	U		100	30	10			
Magnesium	ug/l	EPA200.8	31000			100	30	10	25000			100	30	10	23000			100	30	10	37000			100	30	10			
Manganese	ug/l	EPA200.8	2	U		2	0.6	10	2	U		2	0.6	10	2	U		2	0.6	10	4			2	0.6	10			
Potassium	ug/l	EPA200.8	1800			1000	300	10	1400			1000	300	10	1800			1000	300	10	1100			1000	300	10			
Selenium	ug/l	EPA200.8	1	U		1	0.5	10	1	U		1	0.5	10	1	U		1	0.5	10	1	U		1	0.5	10			
Sodium	ug/l	EPA200.8	65000			1000	300	10	64000			1000	300	10	100000			1000	300	10	61000			1000	300	10			
Strontium	ug/l	EPA200.8	670			1	0.3	10	450			1	0.3	10	540			1	0.3	10	720			1	0.3	10			
Organics																													
Diesel Range Organics	mg/l	SW8015M	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1			
Gasoline Range Organics	ug/l	SW8260_25	100	U		100	30	1	100	U		100	30	1	100	U		100	30	1	100	U		100	30	1			
Dissolved Gases																													
Ethane	ug/l	RSK175	2	U		2	2	1	2	U		2	2	1	2	U		2	2	1	2	U		2	2	1			
Methane	ug/l	RSK175	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1			
Propane	ug/l	RSK175	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1			

Rule 609 BWQ Analytical Results Summary: Well Pad GV 86-2																														
Station Name			Firth 112927							Mitchell Water Well							Rice, John							Schuette 273609						
Facility ID			703063							704671							703035							752941						
Sample Date			10/21/2013 9:42							10/16/2013 12:35							10/22/2013 15:08							10/17/2013 12:16						
Field Sample ID			Firth 112927							Mitchell 149891							Rice-Well							Schuette-273609						
Lab Sample ID			1310347-1							1310292-1							1310387-1							1310307-1						
	Reporting Units	Analytic Method	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF				
VOAs																														
Benzene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1				
Ethylbenzene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1				
m+p-Xylene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1				
o-Xylene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1				
Toluene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1				
Xylenes (Total)	ug/l	Calculation	1	U		1		1	1	U		1		1	1	U		1		1	1	U		1		1				
Bacteria¹																														
Iron Related Bacteria	nu	BART	1			1		1	1			1		1	1			1		1	1			1		1				
Slime forming bacteria	nu	BART	0	U		1		1	0	U		1		1	0	U		1		1	1	U		1		1				
Sulfate Reducing Bacteria	nu	BART	0	U		1		1	0	U		1		1	0	U		1		1	0	U		1		1				
Field_Parameters																														
Bubbles	nu	Field	None					1	None					1	None					1	None					1				
Color	nu	Field	Clear					1	Clear					1	Clear					1	Clear					1				
Conductivity, Field	uS/cm	Field	492					1	414					1	505					1	576					1				
Discharge, measured	gpm	Field	4.2					1	6					1	15					1	10					1				
Dissolved Oxygen, Field	mg/l	Field	6.87					1	7.06					1	7.14					1	5.75					1				
Dissolved Oxygen, Field,%	%	Field	64.8					1	63.8					1	66.7					1	54.4					1				
Effervescence	nu	Field	Mild					1	Mild					1	Mild					1	None					1				
Odor	nu	Field	None					1	None					1	None					1	None					1				
ORP, field	mv	Field	221					1	185.9					1	209.1					1	97.1					1				
pH, Field	s.u.	Field	7.29					1	7.88					1	7.82					1	7.16					1				
Sediment	nu	Field	None						Light						Light						Light									
Specific Conductivity, Field	uS/cm	Field	648					1	571					1	677					1	757					1				
Temperature, Water	Deg C	Field	12.29					1	10.59					1	11.66					1	12.5					1				
Turbidity, field	NTUs	Field	9.26					1	27.95					1	1.68					1	4.9					1				
VOA Headspace	nu	Field	None						None						≤ pea size						None									

Notes:

¹ A result of 1 indicates the presence of bacteria

U = not detected at the reporting limit

NM = not measured

J = result between RL and MDL, estimated

NA = not applicable

R = data rejected

Rule 609 BWQ Analytical Results Summary: Well Pad GV																																	
Station Name			Trip Blank							Trip Blank							Trip Blank							Trip Blank									
Facility ID			703035							703063							704671							752941									
Sample Date			10/22/2013 0:00							10/21/2013 0:00							10/16/2013 0:00							10/17/2013 0:00									
Field Sample ID			Trip Blank							Trip Blank							Trip Blank							Trip Blank									
Lab Sample ID			1310387-2							1310347-3							1310292-2							1310307-2									
	Reporting Units	Analytic Method	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF							
Inorganics																																	
Alkalinity AS CaCO3, Total	mg/l	SM2320B																															
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B																															
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B																															
Bromide	mg/l	EPA300.0																															
Chloride	mg/l	EPA300.0																															
Fluoride	mg/l	EPA300.0																															
Nitrate as N	mg/l	EPA300.0																															
Nitrate/Nitrite as N	mg/l	Calculation																															
Nitrite as N	mg/l	EPA300.0																															
pH	s.u.	SM4500-H																															
Specific Conductivity	umhos/cm	SM2510B																															
Sulfate	mg/l	EPA300.0																															
Total Dissolved Solids	mg/l	SM2540C																															
Total Phosphorous	mg/l	EPA365.2																															
Dissolved Metals																																	
Barium	ug/l	EPA200.8																															
Boron	ug/l	EPA200.8																															
Calcium	ug/l	EPA200.8																															
Iron	ug/l	EPA200.8																															
Magnesium	ug/l	EPA200.8																															
Manganese	ug/l	EPA200.8																															
Potassium	ug/l	EPA200.8																															
Selenium	ug/l	EPA200.8																															
Sodium	ug/l	EPA200.8																															
Strontium	ug/l	EPA200.8																															
Organics																																	
Diesel Range Organics	mg/l	SW8015M																															
Gasoline Range Organics	ug/l	SW8260_25	260		R	100	30	1	64	J		100	30	1	100	U		100	30	1	100	U		100	30	1							
Dissolved Gases																																	
Ethane	ug/l	RSK175																															
Methane	ug/l	RSK175																															
Propane	ug/l	RSK175																															

Rule 609 BWQ Analytical Results Summary: Well Pad GV																										
Station Name			Trip Blank						Trip Blank						Trip Blank						Trip Blank					
Facility ID			703035						703063						704671						752941					
Sample Date			10/22/2013 0:00						10/21/2013 0:00						10/16/2013 0:00						10/17/2013 0:00					
Field Sample ID			Trip Blank						Trip Blank						Trip Blank						Trip Blank					
Lab Sample ID			1310387-2						1310347-3						1310292-2						1310307-2					
	Reporting Units	Analytic Method	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF
VOAs																										
Benzene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
Ethylbenzene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
M+P-Xylene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
o-Xylene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
Toluene	ug/l	SW8260_25	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
Xylenes (Total)	ug/l	Calculation	1	U		1		1	1	U		1		1	1	U		1		1	1	U		1		1
Bacteria ¹																										
Iron Related Bacteria	nu	BART																								
Slime forming bacteria	nu	BART																								
Sulfate Reducing Bacteria	nu	BART																								
Field_Parameters																										
Bubbles	nu	Field																								
Color	nu	Field																								
Conductivity, Field	uS/cm	Field																								
Discharge, measured	gpm	Field																								
Dissolved Oxygen, Field	mg/l	Field																								
Dissolved Oxygen, Field,%	%	Field																								
Effervescence	nu	Field																								
Odor	nu	Field																								
ORP, field	mv	Field																								
pH, Field	s.u.	Field																								
Sediment	nu	Field																								
Specific Conductivity, Field	uS/cm	Field																								
Temperature, Water	Deg C	Field																								
Turbidity, field	NTUs	Field																								
VOA Headspace	nu	Field																								

Notes:

- ¹ A result of 1 indicates the presence of bacteria
- U = not detected at the reporting limit
- NM = not measured
- J = result between RL and MDL, estimated
- NA = not applicable
- R = data rejected

ATTACHMENT E

Laboratory Analytical Summary Report



1310292

GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.

Metals:

The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.



Inorganics:

The sample was analyzed following MCAWW, EMSL, and Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Nitrate/nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1310292

Client Name: Western Water and Land, Inc.

Client Project Name: GV 86-2 BWQ

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Mitchell 149891	1310292-1		WATER	16-Oct-13	12:35
Trip Blank	1310292-2		WATER	16-Oct-13	



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water
Project Manager: ARW

Workorder No: 1310292
Initials: IAS Date: 10/17/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF:	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.6</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / Contact: _____ Date/Time: _____

Project Manager Signature / Date: C. Gray 10/17/13

1310292

518 ZIP

Address: 743 HORIZON CT STE 330
 Company: Western Water and Land
 Sender's Name: Bryle Smith
 Phone: 970-242-1

FROM: (970) 242-0170
 WESTERN WATER & LAND INC
 743 HORIZON CT STE 330
 GRAND JUNCTION CO 81506
 US

SHIP DATE: 16OCT13
 ACT WGT: 38.9 LB
 CAD: 9622/OFFC1424
 DIMMED: 24 X 13 X 12 IN
 BILL 3rd PARTY

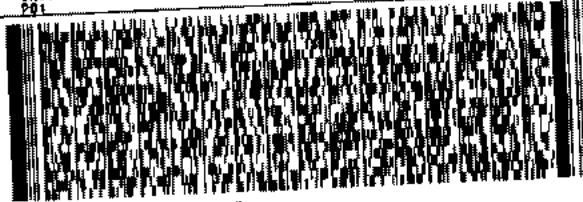
TO amy wolf
 ALS ENVIRONMENTAL
 225 COMMERCE DR
 FORT COLLINS CO 80524

(US)

(970) 480-1522
 INVT 201

REF:

DEPT:



ALBERT LOBEZUSI 276

TRK# 7969 3133 3455

80524

8622 0417 3 (000 733 7852) 4 00 7969 3133 3455



Client: Western Water and Land, Inc.
 Project: GV 86-2 BWQ
 Sample ID: Mitchell 149891
 Legal Location:
 Collection Date: 10/16/2013 12:35

Date: 12-Nov-13
 Work Order: 1310292
 Lab ID: 1310292-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 10/23/2013	PrepBy: KMP
BICARBONATE AS CaCO3	280		20	MG/L	1	10/23/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/23/2013
TOTAL ALKALINITY AS CaCO3	280		20	MG/L	1	10/23/2013
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/4/2013	PrepBy: BAS
IRON RELATED BACTERIA	1		1	NU	1	11/12/2013
SLIME FORMING BACTERIA	ND		1	NU	1	11/12/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	11/12/2013
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 10/18/2013	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	10/18/2013 17:26
Surr: O-TERPHENYL	93		54-123	%REC	1	10/18/2013 17:26
DISSOLVED GASSES			RSK175		Prep Date: 10/21/2013	PrepBy: JFN
METHANE	ND		1	UG/L	1	10/21/2013 17:53
ETHANE	ND		2	UG/L	1	10/21/2013 17:53
PROPANE	ND		1	UG/L	1	10/21/2013 17:53
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 15:53
TOLUENE	ND		1	UG/L	1	10/23/2013 15:53
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 15:53
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 15:53
O-XYLENE	ND		1	UG/L	1	10/23/2013 15:53
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 15:53
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 15:53
Surr: DIBROMOFLUOROMETHANE	97		84-118	%REC	1	10/23/2013 15:53
Surr: TOLUENE-D8	97		85-115	%REC	1	10/23/2013 15:53
Surr: 4-BROMOFLUOROBENZENE	103		85-115	%REC	1	10/23/2013 15:53
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/17/2013	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	10/17/2013 18:34
CHLORIDE	2.7		0.2	MG/L	1	10/17/2013 18:34
FLUORIDE	0.4		0.1	MG/L	1	10/17/2013 18:34
NITRATE/NITRITE AS N	0.89		0.1	MG/L	1	10/17/2013 18:34
NITRITE AS N	ND		0.1	MG/L	1	10/17/2013 18:34
NITRATE AS N	0.89		0.2	MG/L	1	10/17/2013 18:34
SULFATE	34		1	MG/L	1	10/17/2013 18:34
METALS BY 200.8			EPA200.8		Prep Date: 10/22/2013	PrepBy: NAQ
BARIUM	41		1	UG/L	10	10/23/2013 14:26
BORON	72		50	UG/L	10	10/23/2013 14:26
CALCIUM	15000		1000	UG/L	10	10/23/2013 14:26
IRON	ND		100	UG/L	10	10/23/2013 14:26
MAGNESIUM	25000		100	UG/L	10	10/23/2013 14:26
MANGANESE	ND		2	UG/L	10	10/23/2013 14:26

Client: Western Water and Land, Inc.
Project: GV 86-2 BWQ
Sample ID: Mitchell 149891
Legal Location:
Collection Date: 10/16/2013 12:35

Date: 12-Nov-13
Work Order: 1310292
Lab ID: 1310292-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1400		1000	UG/L	10	10/23/2013 14:26
SELENIUM	ND		1	UG/L	10	10/23/2013 14:26
SODIUM	64000		1000	UG/L	10	10/23/2013 14:26
STRONTIUM	450		1	UG/L	10	10/23/2013 14:26
PH			SM4500-H		Prep Date: 10/18/2013	PrepBy: KMP
PH	8.14		0.1	pH	1	10/18/2013
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 10/21/2013	PrepBy: KMP
SPECIFIC CONDUCTIVITY	570		1	umhos/cm	1	10/21/2013
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 10/18/2013	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	350		20	MG/L	1	10/21/2013
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 10/31/2013	PrepBy: AJD
TOTAL PHOSPHORUS	0.066		0.05	MG/L	1	10/31/2013

Client: Western Water and Land, Inc.
Project: GV 86-2 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/16/2013

Date: 12-Nov-13
Work Order: 1310292
Lab ID: 1310292-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 16:15
TOLUENE	ND		1	UG/L	1	10/23/2013 16:15
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 16:15
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 16:15
O-XYLENE	ND		1	UG/L	1	10/23/2013 16:15
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 16:15
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 16:15
Surr: DIBROMOFLUOROMETHANE	96		84-118	%REC	1	10/23/2013 16:15
Surr: TOLUENE-D8	99		85-115	%REC	1	10/23/2013 16:15
Surr: 4-BROMOFLUOROBENZENE	104		85-115	%REC	1	10/23/2013 16:15

Client: Western Water and Land, Inc.
Project: GV 86-2 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/16/2013

Date: 12-Nov-13
Work Order: 1310292
Lab ID: 1310292-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.	M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.	L - LCS Recovery below lower control limit.
Y2 - Chemical Yield outside default limits.	H - LCS Recovery above upper control limit.
W - DER is greater than Warning Limit of 1.42	P - LCS, Matrix Spike Recovery within control limits.
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.	N - Matrix Spike Recovery outside control limits
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.	NC - Not Calculated for duplicate results less than 5 times MDC
G - Sample density differs by more than 15% of LCS density.	B - Analyte concentration greater than MDC.
D - DER is greater than Control Limit	B3 - Analyte concentration greater than MDC but less than Requested MDC.
M - Requested MDC not met.	
LT - Result is less than requested MDC but greater than achieved MDC.	

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client: Western Water and Land, Inc.
Project: GV 86-2 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/16/2013

Date: 12-Nov-13
Work Order: 1310292
Lab ID: 1310292-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<p>G - A pattern resembling gasoline was detected in this sample. D - A pattern resembling diesel was detected in this sample. M - A pattern resembling motor oil was detected in this sample. C - A pattern resembling crude oil was detected in this sample. 4 - A pattern resembling JP-4 was detected in this sample. 5 - A pattern resembling JP-5 was detected in this sample. H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest. L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest. Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline - JP-8 - diesel - mineral spirits - motor oil - Stoddard solvent - bunker C</p>						

ALS Environmental -- FC

Date: 11/12/2013 11:5

Client: Western Water and Land, Inc.
 Work Order: 1310292
 Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: EX131018-3-1 Instrument ID FUELS-1 Method: SW8015M

LCS		Sample ID: EX131018-3			Units: MG/L			Analysis Date: 10/18/2013 18:48			
Client ID:		Run ID: HC131018-3A			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	10.3	0.5	10		103	36-150			20		
Surr: O-TERPHENYL	1.24		1.25		99	54-123					

LCSD		Sample ID: EX131018-3			Units: MG/L			Analysis Date: 10/18/2013 19:16			
Client ID:		Run ID: HC131018-3A			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	9.9	0.5	10		99	36-150	10.3	4	20		
Surr: O-TERPHENYL	1.12		1.25		90	54-123		10			

MB		Sample ID: EX131018-3			Units: MG/L			Analysis Date: 10/18/2013 16:59			
Client ID:		Run ID: HC131018-3A			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	ND	0.5									
Surr: O-TERPHENYL	1.17		1.25		93	54-123					

MS		Sample ID: 1310292-1			Units: MG/L			Analysis Date: 10/18/2013 17:53			
Client ID: Mitchell 149891		Run ID: HC131018-3A			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	10	0.5	10	0.5	100	36-150			20		
Surr: O-TERPHENYL	1.21		1.25		97	54-123					

MSD		Sample ID: 1310292-1			Units: MG/L			Analysis Date: 10/18/2013 18:21			
Client ID: Mitchell 149891		Run ID: HC131018-3A			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	9.83	0.5	10	0.5	98	36-150	10	2	20		
Surr: O-TERPHENYL	1.17		1.25		94	54-123		3			

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310292
 Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **HC131021-9-2** Instrument ID **MEE-1** Method: **RSK175**

DUP		Sample ID: 1310292-1			Units: UG/L			Analysis Date: 10/21/2013 17:58		
Client ID: Mitchell 149891		Run ID: HC131021-9A			Prep Date: 10/21/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1					1		25	
ETHANE	ND	2					2		25	
PROPANE	ND	1					1		25	

LCS		Sample ID: HC131021-9			Units: UG/L			Analysis Date: 10/21/2013 17:26		
Client ID:		Run ID: HC131021-9A			Prep Date: 10/21/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	130	1	142		91	80-120			25	
ETHANE	243	2	267		91	80-120			25	
PROPANE	348	1	391		89	80-120			25	

LCSD		Sample ID: HC131021-9			Units: UG/L			Analysis Date: 10/21/2013 18:21		
Client ID:		Run ID: HC131021-9A			Prep Date: 10/21/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	128	1	142		90	80-120	130	2	25	
ETHANE	237	2	267		89	80-120	243	2	25	
PROPANE	337	1	391		86	80-120	348	3	25	

MB		Sample ID: HC131021-9			Units: UG/L			Analysis Date: 10/21/2013 17:32		
Client ID:		Run ID: HC131021-9A			Prep Date: 10/21/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310292
 Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **IP131022-5-3** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FM131022-5			Units: UG/L		Analysis Date: 10/23/2013 14:49			
Client ID:		Run ID: IM131023-10A4			Prep Date: 10/22/2013		DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	95.8	1	100		96	85-115			20	
BORON	1000	50	1000		100	85-115			20	
CALCIUM	10400	1000	10000		104	85-115			20	
IRON	5120	100	5000		102	85-115			20	
MAGNESIUM	9190	100	10000		92	85-115			20	
MANGANESE	194	2	200		97	85-115			20	
POTASSIUM	4870	1000	5000		97	85-115			20	
SELENIUM	95.2	1	100		95	85-115			20	
SODIUM	9940	1000	10000		99	85-115			20	
STRONTIUM	94.4	1	100		94	85-115			20	

MB		Sample ID: FP131022-5			Units: UG/L		Analysis Date: 10/23/2013 14:57			
Client ID:		Run ID: IM131023-10A4			Prep Date: 10/22/2013		DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	ND	1								
BORON	ND	50								
CALCIUM	ND	1000								
IRON	ND	100								
MAGNESIUM	ND	100								
MANGANESE	ND	2								
POTASSIUM	ND	1000								
SELENIUM	ND	1								
SODIUM	ND	1000								
STRONTIUM	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310292
 Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: VL131023-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:14			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	8.97	1	10		90	83-117			20		
TOLUENE	9.1	1	10		91	82-113			20		
ETHYLBENZENE	9.23	1	10		92	81-113			20		
M+P-XYLENE	18.8	1	20		94	82-115			20		
O-XYLENE	9.57	1	10		96	81-115			20		
Surr: DIBROMOFLUOROMETHA	24.3		25		97	84-118					
Surr: TOLUENE-D8	24.1		25		96	85-115					
Surr: 4-BROMOFLUOROBENZE	25.2		25		101	85-115					

LCS		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 11:57			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	504	100	500		101	80-120			20		

LCSD		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:36			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9	1	10		90	83-117	8.97	0	20		
TOLUENE	9.32	1	10		93	82-113	9.1	2	20		
ETHYLBENZENE	9.27	1	10		93	81-113	9.23	0	20		
M+P-XYLENE	19.2	1	20		96	82-115	18.8	2	20		
O-XYLENE	9.41	1	10		94	81-115	9.57	2	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		99	84-118		2			
Surr: TOLUENE-D8	24.8		25		99	85-115		3			
Surr: 4-BROMOFLUOROBENZE	25.9		25		103	85-115		2			

LCSD		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 12:21			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	488	100	500		98	80-120	504	3	20		

Client: Western Water and Land, Inc.
Work Order: 1310292
Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **VL131023-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL131023-4** Units: **UG/L** Analysis Date: **10/23/2013 13:59**
 Client ID: Run ID: **VL131023-4A** Prep Date: **10/23/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	23.8		25		95	84-118				
Surr: TOLUENE-D8	24.7		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	25.8		25		103	85-115				

The following samples were analyzed in this batch:

1310292-1	1310292-2
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Client: Western Water and Land, Inc.
Work Order: 1310292
Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **AK131023-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK131023-1			Units: MG/L		Analysis Date: 10/23/2013			
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	96.6	5	100		96	85-115			15	

MB		Sample ID: AK131023-1			Units: MG/L		Analysis Date: 10/23/2013			
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310292
 Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **IC131017-1-2** Instrument ID **IC** Method: **EPA300.0**

LCS Sample ID: **IC131017-1** Units: **MG/L** Analysis Date: **10/17/2013 17:10**

Client ID: Run ID: **IC131017-1A1** Prep Date: **10/17/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	2.02	0.1	2		101	90-110			15	
CHLORIDE	5.14	0.2	5		103	90-110			15	
NITRITE AS N	1.99	0.1	2		99	90-110			15	
BROMIDE	5.34	0.2	5		107	90-110			15	
NITRATE AS N	5.28	0.2	5		106	90-110			15	
SULFATE	20.1	1	20		101	90-110			15	

MB Sample ID: **IC131017-1** Units: **MG/L** Analysis Date: **10/17/2013 17:24**

Client ID: Run ID: **IC131017-1A1** Prep Date: **10/17/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch:

1310292-1

Client: Western Water and Land, Inc.
Work Order: 1310292
Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **pH131018-1-2** Instrument ID **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV			Units: pH		Analysis Date: 10/18/2013				
Client ID:		Run ID: pH131018-1A			Prep Date: 10/18/2013		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
PH	6.98	0.1	7			6.9-7.1					

ICV		Sample ID: ICV			Units: pH		Analysis Date: 10/18/2013				
Client ID:		Run ID: pH131018-1A			Prep Date: 10/18/2013		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
PH	7	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1310292
Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **TD131018-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD131018-1** Units: **MG/L** Analysis Date: **10/21/2013**
 Client ID: Run ID: **TD131021-1A** Prep Date: **10/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	419	20	400		105	85-115			5	

MB Sample ID: **TD131018-1** Units: **MG/L** Analysis Date: **10/21/2013**
 Client ID: Run ID: **TD131021-1A** Prep Date: **10/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1310292
Project: GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **TP131031-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.484	0.05	0.5		97	80-120			20	

MB		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch:



1310307

GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.:

BART:

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.

Metals:

The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.



Inorganics:

The sample was analyzed following MCAWW, EMSL, and Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Nitrate/nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1310307

Client Name: Western Water and Land, Inc.

Client Project Name: WPX BWQ GV 86-2

Client Project Number: 30000.01.71

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Schuetze-273609	1310307-1		WATER	17-Oct-13	12:16
Trip Blank	1310307-2		WATER	17-Oct-13	



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: W. Water
Project Manager: ARW

Workorder No: 1310307
Initials: Las Date: 10/18/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.6</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>10</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria: <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: [Signature] 10/21/13

1310307

FROM: (970) 242-0170
WESTERN WATER & LAND INC
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 17OCT13
ACTWGT: 43.1 LB
CAD: 9622/POS1424
DIMMED: 25 X 14 X 14 IN
BILL 3rd PARTY

TO amy wolf
ALS ENVIRONMENTAL
225 COMMERCE DR

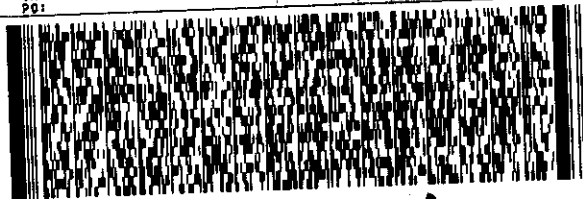
122

FORT COLLINS CO 80524

(US)

(970) 490-1511
INU: PO:

REF: DEPT:



FedEx
Ground



J132013002280126

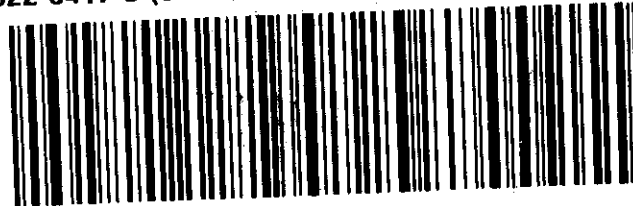
TRK# 7969 4185 8545

1.6

0955

80524

9622-0417 3 (000 045 7800) 7 00 7969 4185 8545



Client: Western Water and Land, Inc.
 Project: 30000.01.71 WPX BWQ GV 86-2
 Sample ID: Schuette-273609
 Legal Location:
 Collection Date: 10/17/2013 12:16

Date: 12-Nov-13
 Work Order: 1310307
 Lab ID: 1310307-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 10/23/2013	PrepBy: KMP
BICARBONATE AS CaCO3	390		20	MG/L	1	10/23/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/23/2013
TOTAL ALKALINITY AS CaCO3	390		20	MG/L	1	10/23/2013
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/4/2013	PrepBy: BAS
IRON RELATED BACTERIA	1		1	NU	1	11/12/2013
SLIME FORMING BACTERIA	1		1	NU	1	11/12/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	11/12/2013
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 10/22/2013	PrepBy: BCH
Diesel Range Organics	ND		0.5	MG/L	1	10/22/2013 20:32
Surr: O-TERPHENYL	98		54-123	%REC	1	10/22/2013 20:32
DISSOLVED GASSES			RSK175		Prep Date: 10/21/2013	PrepBy: JFN
METHANE	ND		1	UG/L	1	10/21/2013 18:02
ETHANE	ND		2	UG/L	1	10/21/2013 18:02
PROPANE	ND		1	UG/L	1	10/21/2013 18:02
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 16:38
TOLUENE	ND		1	UG/L	1	10/23/2013 16:38
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 16:38
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 16:38
O-XYLENE	ND		1	UG/L	1	10/23/2013 16:38
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 16:38
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 16:38
Surr: DIBROMOFLUOROMETHANE	96		84-118	%REC	1	10/23/2013 16:38
Surr: TOLUENE-D8	98		85-115	%REC	1	10/23/2013 16:38
Surr: 4-BROMOFLUOROBENZENE	104		85-115	%REC	1	10/23/2013 16:38
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/18/2013	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	10/18/2013 17:20
CHLORIDE	4.5		0.2	MG/L	1	10/18/2013 17:20
FLUORIDE	0.21		0.1	MG/L	1	10/18/2013 17:20
NITRATE/NITRITE AS N	1.8		0.1	MG/L	1	10/18/2013 17:20
NITRITE AS N	ND		0.1	MG/L	1	10/18/2013 17:20
NITRATE AS N	1.8		0.2	MG/L	1	10/18/2013 17:20
SULFATE	33		1	MG/L	1	10/18/2013 17:20
METALS BY 200.8			EPA200.8		Prep Date: 10/22/2013	PrepBy: NAQ
BARIIUM	120		1	UG/L	10	10/23/2013 14:29
BORON	78		50	UG/L	10	10/23/2013 14:29
CALCIUM	39000		1000	UG/L	10	10/23/2013 14:29
IRON	ND		100	UG/L	10	10/23/2013 14:29
MAGNESIUM	37000		100	UG/L	10	10/23/2013 14:29
MANGANESE	4		2	UG/L	10	10/23/2013 14:29

Client: Western Water and Land, Inc.
Project: 30000.01.71 WPX BWQ GV 86-2
Sample ID: Schuette-273609
Legal Location:
Collection Date: 10/17/2013 12:16

Date: 12-Nov-13
Work Order: 1310307
Lab ID: 1310307-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1100		1000	UG/L	10	10/23/2013 14:29
SELENIUM	ND		1	UG/L	10	10/23/2013 14:29
SODIUM	61000		1000	UG/L	10	10/23/2013 14:29
STRONTIUM	720		1	UG/L	10	10/23/2013 14:29
PH			SM4500-H		Prep Date: 10/21/2013	PrepBy: KMP
PH	7.91		0.1	pH	1	10/21/2013
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 10/21/2013	PrepBy: KMP
SPECIFIC CONDUCTIVITY	758		1	umhos/cm	1	10/21/2013
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 10/22/2013	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	460		20	MG/L	1	10/23/2013
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 10/31/2013	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	10/31/2013

Client: Western Water and Land, Inc.
Project: 30000.01.71 WPX BWQ GV 86-2
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/17/2013

Date: 12-Nov-13
Work Order: 1310307
Lab ID: 1310307-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 17:01
TOLUENE	ND		1	UG/L	1	10/23/2013 17:01
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 17:01
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 17:01
O-XYLENE	ND		1	UG/L	1	10/23/2013 17:01
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 17:01
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 17:01
Surr: DIBROMOFLUOROMETHANE	98		84-118	%REC	1	10/23/2013 17:01
Surr: TOLUENE-D8	99		85-115	%REC	1	10/23/2013 17:01
Surr: 4-BROMOFLUOROBENZENE	105		85-115	%REC	1	10/23/2013 17:01

Client: Western Water and Land, Inc.
Project: 30000.01.71 WPX BWQ GV 86-2
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/17/2013

Date: 12-Nov-13
Work Order: 1310307
Lab ID: 1310307-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.	M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.	L - LCS Recovery below lower control limit.
Y2 - Chemical Yield outside default limits.	H - LCS Recovery above upper control limit.
W - DER is greater than Warning Limit of 1.42	P - LCS, Matrix Spike Recovery within control limits.
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.	N - Matrix Spike Recovery outside control limits
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.	NC - Not Calculated for duplicate results less than 5 times MDC
G - Sample density differs by more than 15% of LCS density.	B - Analyte concentration greater than MDC.
D - DER is greater than Control Limit	B3 - Analyte concentration greater than MDC but less than Requested MDC.
M - Requested MDC not met.	
LT - Result is less than requested MDC but greater than achieved MDC.	

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client: Western Water and Land, Inc.
Project: 30000.01.71 WPX BWQ GV 86-2
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/17/2013

Date: 12-Nov-13
Work Order: 1310307
Lab ID: 1310307-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<p>G - A pattern resembling gasoline was detected in this sample. D - A pattern resembling diesel was detected in this sample. M - A pattern resembling motor oil was detected in this sample. C - A pattern resembling crude oil was detected in this sample. 4 - A pattern resembling JP-4 was detected in this sample. 5 - A pattern resembling JP-5 was detected in this sample. H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest. L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest. Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline - JP-8 - diesel - mineral spirits - motor oil - Stoddard solvent - bunker C</p>						

ALS Environmental -- FC

Date: 11/12/2013 12:0

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 1310307

Project: 30000.01.71 WPX BWQ GV 86-2

Batch ID: HC131021-9-2

Instrument ID MEE-1

Method: RSK175

LCS Sample ID: **HC131021-9** Units: **UG/L** Analysis Date: **10/21/2013 17:26**
 Client ID: Run ID: **HC131021-9A** Prep Date: **10/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	130	1	142		91	80-120			25	
ETHANE	243	2	267		91	80-120			25	
PROPANE	348	1	391		89	80-120			25	

LCSD Sample ID: **HC131021-9** Units: **UG/L** Analysis Date: **10/21/2013 18:21**
 Client ID: Run ID: **HC131021-9A** Prep Date: **10/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	128	1	142		90	80-120	130	2	25	
ETHANE	237	2	267		89	80-120	243	2	25	
PROPANE	337	1	391		86	80-120	348	3	25	

MB Sample ID: **HC131021-9** Units: **UG/L** Analysis Date: **10/21/2013 17:32**
 Client ID: Run ID: **HC131021-9A** Prep Date: **10/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310307
 Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **EX131022-3-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: EX131022-3			Units: MG/L		Analysis Date: 10/22/2013 19:36			
Client ID:		Run ID: HC131022-3A			Prep Date: 10/22/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.91	0.5	10		99	36-150			20	
Surr: O-TERPHENYL	1.29		1.25		103	54-123				

LCSD		Sample ID: EX131022-3			Units: MG/L		Analysis Date: 10/22/2013 20:04			
Client ID:		Run ID: HC131022-3A			Prep Date: 10/22/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.3	0.5	10		103	36-150	9.91	4	20	
Surr: O-TERPHENYL	1.35		1.25		108	54-123		5		

MB		Sample ID: EX131022-3			Units: MG/L		Analysis Date: 10/22/2013 19:09			
Client ID:		Run ID: HC131022-3A			Prep Date: 10/22/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.17		1.25		94	54-123				

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310307
 Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **IP131022-5-3** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FM131022-5			Units: UG/L			Analysis Date: 10/23/2013 14:49			
Client ID:		Run ID: IM131023-10A4			Prep Date: 10/22/2013			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	95.8	1	100		96	85-115			20		
BORON	1000	50	1000		100	85-115			20		
CALCIUM	10400	1000	10000		104	85-115			20		
IRON	5120	100	5000		102	85-115			20		
MAGNESIUM	9190	100	10000		92	85-115			20		
MANGANESE	194	2	200		97	85-115			20		
POTASSIUM	4870	1000	5000		97	85-115			20		
SELENIUM	95.2	1	100		95	85-115			20		
SODIUM	9940	1000	10000		99	85-115			20		
STRONTIUM	94.4	1	100		94	85-115			20		

MB		Sample ID: FP131022-5			Units: UG/L			Analysis Date: 10/23/2013 14:57			
Client ID:		Run ID: IM131023-10A4			Prep Date: 10/22/2013			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	ND	1									
BORON	ND	50									
CALCIUM	ND	1000									
IRON	ND	100									
MAGNESIUM	ND	100									
MANGANESE	ND	2									
POTASSIUM	ND	1000									
SELENIUM	ND	1									
SODIUM	ND	1000									
STRONTIUM	ND	1									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310307
 Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: VL131023-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:14			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	8.97	1	10		90	83-117			20		
TOLUENE	9.1	1	10		91	82-113			20		
ETHYLBENZENE	9.23	1	10		92	81-113			20		
M+P-XYLENE	18.8	1	20		94	82-115			20		
O-XYLENE	9.57	1	10		96	81-115			20		
Surr: DIBROMOFLUOROMETHA	24.3		25		97	84-118					
Surr: TOLUENE-D8	24.1		25		96	85-115					
Surr: 4-BROMOFLUOROBENZE	25.2		25		101	85-115					

LCS		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 11:57			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	504	100	500		101	80-120			20		

LCSD		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:36			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9	1	10		90	83-117	8.97	0	20		
TOLUENE	9.32	1	10		93	82-113	9.1	2	20		
ETHYLBENZENE	9.27	1	10		93	81-113	9.23	0	20		
M+P-XYLENE	19.2	1	20		96	82-115	18.8	2	20		
O-XYLENE	9.41	1	10		94	81-115	9.57	2	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		99	84-118		2			
Surr: TOLUENE-D8	24.8		25		99	85-115		3			
Surr: 4-BROMOFLUOROBENZE	25.9		25		103	85-115		2			

LCSD		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 12:21			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	488	100	500		98	80-120	504	3	20		

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **VL131023-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL131023-4** Units: **UG/L** Analysis Date: **10/23/2013 13:59**
 Client ID: Run ID: **VL131023-4A** Prep Date: **10/23/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	23.8		25		95	84-118				
Surr: TOLUENE-D8	24.7		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	25.8		25		103	85-115				

The following samples were analyzed in this batch: 1310307-1 1310307-2

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **AK131023-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK131023-1			Units: MG/L			Analysis Date: 10/23/2013		
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	96.6	5	100		96	85-115			15	

MB		Sample ID: AK131023-1			Units: MG/L			Analysis Date: 10/23/2013		
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310307
 Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **IC131018-1-1** Instrument ID **IC** Method: **EPA300.0**

LCS		Sample ID: IC131018-1			Units: MG/L			Analysis Date: 10/18/2013 16:37			
Client ID:		Run ID: IC131018-1A1			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
FLUORIDE	2.03	0.1	2		101	90-110			15		
CHLORIDE	5.1	0.2	5		102	90-110			15		
NITRITE AS N	1.97	0.1	2		99	90-110			15		
BROMIDE	5.37	0.2	5		107	90-110			15		
NITRATE AS N	5.29	0.2	5		106	90-110			15		
SULFATE	20.3	1	20		102	90-110			15		

MB		Sample ID: IC131018-1			Units: MG/L			Analysis Date: 10/18/2013 16:52			
Client ID:		Run ID: IC131018-1A1			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
FLUORIDE	ND	0.1									
CHLORIDE	ND	0.2									
NITRITE AS N	ND	0.1									
BROMIDE	ND	0.2									
NITRATE AS N	ND	0.2									
SULFATE	ND	1									

MS		Sample ID: 1310307-1			Units: MG/L			Analysis Date: 10/18/2013 17:34			
Client ID: Schuette-273609		Run ID: IC131018-1A1			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
FLUORIDE	2.31	0.1	2	0.21	105	85-115			15		
CHLORIDE	9.47	0.2	5	4.5	100	85-115			15		
NITRITE AS N	1.89	0.1	2	0.1	94	85-115			15		
BROMIDE	5.31	0.2	5	0.2	106	85-115			15		
NITRATE AS N	7.17	0.2	5	1.8	107	85-115			15		
SULFATE	53.2	1	20	33	103	85-115			15		

MSD		Sample ID: 1310307-1			Units: MG/L			Analysis Date: 10/18/2013 17:48			
Client ID: Schuette-273609		Run ID: IC131018-1A1			Prep Date: 10/18/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
FLUORIDE	2.3	0.1	2	0.21	105	85-115	2.31	0	15		
CHLORIDE	9.47	0.2	5	4.5	100	85-115	9.47	0	15		
NITRITE AS N	1.9	0.1	2	0.1	95	85-115	1.89	1	15		
BROMIDE	5.3	0.2	5	0.2	106	85-115	5.31	0	15		
NITRATE AS N	7.17	0.2	5	1.8	107	85-115	7.17	0	15		
SULFATE	53.3	1	20	33	103	85-115	53.2	0	15		

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

The following samples were analyzed in this batch:

1310307-1

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **pH131021-1-2** Instrument ID **pH-1** Method: **SM4500-H**

DUP Sample ID: **1310307-1** Units: **pH** Analysis Date: **10/21/2013**
Client ID: **Schuetz-273609** Run ID: **pH131021-1A** Prep Date: **10/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	7.86	0.1					7.91		0.2	

The following samples were analyzed in this batch:

1310307-1

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **SC131021-1-1** Instrument ID **pH-1** Method: **SM2510B**

DUP Sample ID: **1310307-1** Units: **umhos/cm** Analysis Date: **10/21/2013**
Client ID: **Schuetz-273609** Run ID: **SC131021-1A** Prep Date: **10/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	766	1					758	1	10	

The following samples were analyzed in this batch:

1310307-1

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **TD131022-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD131022-1** Units: **MG/L** Analysis Date: **10/23/2013**
 Client ID: Run ID: **TD131023-1A** Prep Date: **10/22/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	402	20	400		101	85-115			5	

MB Sample ID: **TD131022-1** Units: **MG/L** Analysis Date: **10/23/2013**
 Client ID: Run ID: **TD131023-1A** Prep Date: **10/22/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1310307-1

Client: Western Water and Land, Inc.
Work Order: 1310307
Project: 30000.01.71 WPX BWQ GV 86-2

QC BATCH REPORT

Batch ID: **TP131031-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.484	0.05	0.5		97	80-120			20	

MB		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch:



1310347

GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:

The samples were prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.

Metals:

The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The samples were to be analyzed for dissolved metals. The samples were filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.



Inorganics:

The samples were analyzed following MCAWW, EMSL, and Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Nitrate/nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1310347

Client Name: Western Water and Land, Inc.

Client Project Name: GV 86-2 BWQ

Client Project Number: 30000.01.71

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Firth 112927	1310347-1		WATER	21-Oct-13	9:42
Hanson Well	1310347-2		WATER	21-Oct-13	11:45
Trip Blank	1310347-3		WATER	21-Oct-13	
Hanson Well	1310347-4		WATER	21-Oct-13	11:45



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: W. Water

Workorder No: 1310347

Project Manager: ARW

Initials: PAJ

Date: 10/22/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.6</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>10</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: ARW 10/22/13

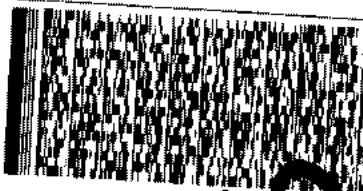
FROM:
WESTERN WATER & LAND INC
749 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 21OCT13
ACTWT: 50.8 LB
CAD: 9622/PO91424
DIMMED: 24 X 15 X 14 IN
BILL 3rd PARTY

TO

ALS ENVIRONMENTAL
225 COMMERCE DR

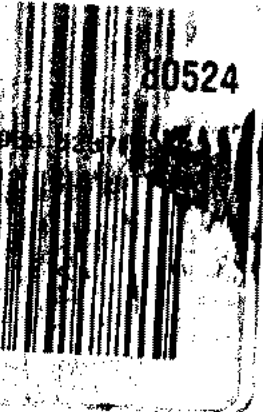
FORT COLLINS CO 80521
(970) 490-1511 REF1



1310347
805
225 COMMERCE DR
FORT COLLINS CO
401-3543
80524-2762-35
295 DE 10 PM 10 2601026
G
ET 24
9622017 29500457800/00 / 960623/2911
PD XX 100 Y

TRK# 7969 6237 2911

122



9622 0417 3 (000 0007800) 7 00 7969 6237 2911

1.6

L

Client: Western Water and Land, Inc.
 Project: 30000.01.71 GV 86-2 BWQ
 Sample ID: Firth 112927
 Legal Location:
 Collection Date: 10/21/2013 09:42

Date: 12-Nov-13
 Work Order: 1310347
 Lab ID: 1310347-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 10/23/2013	PrepBy: KMP
BICARBONATE AS CaCO3	330		20	MG/L	1	10/23/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/23/2013
TOTAL ALKALINITY AS CaCO3	330		20	MG/L	1	10/23/2013
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/4/2013	PrepBy: BAS
IRON RELATED BACTERIA	1		1	NU	1	11/12/2013
SLIME FORMING BACTERIA	ND		1	NU	1	11/12/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	11/12/2013
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 10/28/2013	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	10/28/2013 14:30
Surr: O-TERPHENYL	101		54-123	%REC	1	10/28/2013 14:30
DISSOLVED GASSES			RSK175		Prep Date: 10/28/2013	PrepBy: JFN
METHANE	ND		1	UG/L	1	10/28/2013 17:08
ETHANE	ND		2	UG/L	1	10/28/2013 17:08
PROPANE	ND		1	UG/L	1	10/28/2013 17:08
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 17:24
TOLUENE	ND		1	UG/L	1	10/23/2013 17:24
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 17:24
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 17:24
O-XYLENE	ND		1	UG/L	1	10/23/2013 17:24
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 17:24
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 17:24
Surr: DIBROMOFLUOROMETHANE	94		84-118	%REC	1	10/23/2013 17:24
Surr: TOLUENE-D8	99		85-115	%REC	1	10/23/2013 17:24
Surr: 4-BROMOFLUOROBENZENE	103		85-115	%REC	1	10/23/2013 17:24
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/22/2013	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	10/22/2013 17:02
CHLORIDE	6.5		0.2	MG/L	1	10/22/2013 17:02
FLUORIDE	0.25		0.1	MG/L	1	10/22/2013 17:02
NITRATE/NITRITE AS N	1.3		0.1	MG/L	1	10/22/2013 17:02
NITRITE AS N	ND		0.1	MG/L	1	10/22/2013 17:02
NITRATE AS N	1.3		0.2	MG/L	1	10/22/2013 17:02
SULFATE	20		1	MG/L	1	10/22/2013 17:02
METALS BY 200.8			EPA200.8		Prep Date: 10/25/2013	PrepBy: NAQ
BARIIUM	92		1	UG/L	10	10/28/2013 12:15
BORON	110		50	UG/L	10	10/28/2013 12:15
CALCIUM	26000		1000	UG/L	10	10/28/2013 12:15
IRON	ND		100	UG/L	10	10/28/2013 12:15
MAGNESIUM	31000		100	UG/L	10	10/28/2013 12:15
MANGANESE	ND		2	UG/L	10	10/28/2013 12:15

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Firth 112927
Legal Location:
Collection Date: 10/21/2013 09:42

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1800		1000	UG/L	10	10/28/2013 12:15
SELENIUM	ND		1	UG/L	10	10/28/2013 12:15
SODIUM	65000		1000	UG/L	10	10/28/2013 12:15
STRONTIUM	670		1	UG/L	10	10/28/2013 12:15
PH			SM4500-H		Prep Date: 10/24/2013	PrepBy: KMP
PH	7.88		0.1	pH	1	10/24/2013
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 10/24/2013	PrepBy: KMP
SPECIFIC CONDUCTIVITY	635		1	umhos/cm	1	10/24/2013
TOTAL DISSOLVED SOLIDS			EPA160.1		Prep Date: 10/25/2013	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	390		20	MG/L	1	10/28/2013
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 10/31/2013	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	10/31/2013

Client: Western Water and Land, Inc.
 Project: 30000.01.71 GV 86-2 BWQ
 Sample ID: Hanson Well
 Legal Location:
 Collection Date: 10/21/2013 11:45

Date: 12-Nov-13
 Work Order: 1310347
 Lab ID: 1310347-2
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 10/23/2013	PrepBy: KMP
BICARBONATE AS CaCO3	420		20	MG/L	1	10/23/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/23/2013
TOTAL ALKALINITY AS CaCO3	420		20	MG/L	1	10/23/2013
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/4/2013	PrepBy: BAS
IRON RELATED BACTERIA	1		1	NU	1	11/12/2013
SLIME FORMING BACTERIA	1		1	NU	1	11/12/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	11/12/2013
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 10/28/2013	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	10/28/2013 15:52
Surr: O-TERPHENYL	98		54-123	%REC	1	10/28/2013 15:52
DISSOLVED GASSES			RSK175		Prep Date: 10/28/2013	PrepBy: JFN
METHANE	ND		1	UG/L	1	10/28/2013 17:13
ETHANE	ND		2	UG/L	1	10/28/2013 17:13
PROPANE	ND		1	UG/L	1	10/28/2013 17:13
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 17:48
TOLUENE	ND		1	UG/L	1	10/23/2013 17:48
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 17:48
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 17:48
O-XYLENE	ND		1	UG/L	1	10/23/2013 17:48
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 17:48
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 17:48
Surr: DIBROMOFLUOROMETHANE	96		84-118	%REC	1	10/23/2013 17:48
Surr: TOLUENE-D8	98		85-115	%REC	1	10/23/2013 17:48
Surr: 4-BROMOFLUOROBENZENE	102		85-115	%REC	1	10/23/2013 17:48
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/22/2013	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	10/22/2013 17:16
CHLORIDE	11		0.2	MG/L	1	10/22/2013 17:16
FLUORIDE	0.36		0.1	MG/L	1	10/22/2013 17:16
NITRATE/NITRITE AS N	2.1		0.1	MG/L	1	10/22/2013 17:16
NITRITE AS N	ND		0.1	MG/L	1	10/22/2013 17:16
NITRATE AS N	2.1		0.2	MG/L	1	10/22/2013 17:16
SULFATE	64		1	MG/L	1	10/22/2013 17:16
METALS BY 200.8			EPA200.8		Prep Date: 10/25/2013	PrepBy: NAQ
BARIIUM	32		1	UG/L	10	10/28/2013 12:40
BORON	210		50	UG/L	10	10/28/2013 12:40
CALCIUM	18000		1000	UG/L	10	10/28/2013 12:40
IRON	ND		100	UG/L	10	10/28/2013 12:40
MAGNESIUM	31000		100	UG/L	10	10/28/2013 12:40
MANGANESE	ND		2	UG/L	10	10/28/2013 12:40

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Hanson Well
Legal Location:
Collection Date: 10/21/2013 11:45

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	2100		1000	UG/L	10	10/28/2013 12:40
SELENIUM	2.8		1	UG/L	10	10/28/2013 12:40
SODIUM	130000		1000	UG/L	10	10/28/2013 12:40
STRONTIUM	430		1	UG/L	10	10/28/2013 12:40
PH			SM4500-H		Prep Date: 10/24/2013	PrepBy: KMP
PH	7.94		0.1	pH	1	10/24/2013
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 10/24/2013	PrepBy: KMP
SPECIFIC CONDUCTIVITY	878		1	umhos/cm	1	10/24/2013
TOTAL DISSOLVED SOLIDS			EPA160.1		Prep Date: 10/25/2013	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	550		20	MG/L	1	10/28/2013
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 10/31/2013	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	10/31/2013

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/21/2013

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-3
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 18:11
TOLUENE	ND		1	UG/L	1	10/23/2013 18:11
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 18:11
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 18:11
O-XYLENE	ND		1	UG/L	1	10/23/2013 18:11
GASOLINE RANGE ORGANICS	64	J	100	UG/L	1	10/23/2013 18:11
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 18:11
Surr: DIBROMOFLUOROMETHANE	94		84-118	%REC	1	10/23/2013 18:11
Surr: TOLUENE-D8	101		85-115	%REC	1	10/23/2013 18:11
Surr: 4-BROMOFLUOROBENZENE	101		85-115	%REC	1	10/23/2013 18:11

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Hanson Well
Legal Location:
Collection Date: 10/21/2013 11:45

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-4
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED GASSES			RSK175		Prep Date: 10/28/2013	PrepBy: JFN
METHANE	ND			1 UG/L	1	10/28/2013 17:17
ETHANE	ND			2 UG/L	1	10/28/2013 17:17
PROPANE	ND			1 UG/L	1	10/28/2013 17:17

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Hanson Well
Legal Location:
Collection Date: 10/21/2013 11:45

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-4
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.	M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.	L - LCS Recovery below lower control limit.
Y2 - Chemical Yield outside default limits.	H - LCS Recovery above upper control limit.
W - DER is greater than Warning Limit of 1.42	P - LCS, Matrix Spike Recovery within control limits.
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.	N - Matrix Spike Recovery outside control limits
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.	NC - Not Calculated for duplicate results less than 5 times MDC
G - Sample density differs by more than 15% of LCS density.	B - Analyte concentration greater than MDC.
D - DER is greater than Control Limit	B3 - Analyte concentration greater than MDC but less than Requested MDC.
M - Requested MDC not met.	
LT - Result is less than requested MDC but greater than achieved MDC.	

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 BWQ
Sample ID: Hanson Well
Legal Location:
Collection Date: 10/21/2013 11:45

Date: 12-Nov-13
Work Order: 1310347
Lab ID: 1310347-4
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<p>G - A pattern resembling gasoline was detected in this sample. D - A pattern resembling diesel was detected in this sample. M - A pattern resembling motor oil was detected in this sample. C - A pattern resembling crude oil was detected in this sample. 4 - A pattern resembling JP-4 was detected in this sample. 5 - A pattern resembling JP-5 was detected in this sample. H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest. L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest. Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline - JP-8 - diesel - mineral spirits - motor oil - Stoddard solvent - bunker C</p>						

ALS Environmental -- FC

Date: 11/12/2013 12:2

Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: EX131028-1-1 Instrument ID FUELS-1 Method: SW8015M

LCS		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 13:08			
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	10.7	0.5	10		107	36-150			20		
Surr: O-TERPHENYL	1.26		1.25		101	54-123					

LCSD		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 13:35			
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	11	0.5	10		110	36-150	10.7	3	20		
Surr: O-TERPHENYL	1.3		1.25		104	54-123		3			

MB		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 12:40			
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	ND	0.5									
Surr: O-TERPHENYL	1.36		1.25		108	54-123					

MS		Sample ID: 1310347-1			Units: MG/L			Analysis Date: 10/28/2013 14:57			
Client ID: Firth 112927		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	10.5	0.5	10	0.5	105	36-150			20		
Surr: O-TERPHENYL	1.24		1.25		99	54-123					

MSD		Sample ID: 1310347-1			Units: MG/L			Analysis Date: 10/28/2013 15:25			
Client ID: Firth 112927		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
Diesel Range Organics	10.6	0.5	10	0.5	106	36-150	10.5	1	20		
Surr: O-TERPHENYL	1.24		1.25		99	54-123		0			

The following samples were analyzed in this batch: 1310347-1 1310347-2

Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **HC131028-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS		Sample ID: HC131028-9			Units: UG/L			Analysis Date: 10/28/2013 16:56		
Client ID:		Run ID: HC131028-9A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	133	1	142		94	80-120			25	
ETHANE	247	2	267		93	80-120			25	
PROPANE	355	1	391		91	80-120			25	

LCSD		Sample ID: HC131028-9			Units: UG/L			Analysis Date: 10/28/2013 18:11		
Client ID:		Run ID: HC131028-9A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	132	1	142		93	80-120	133	1	25	
ETHANE	246	2	267		92	80-120	247	1	25	
PROPANE	351	1	391		90	80-120	355	1	25	

MB		Sample ID: HC131028-9			Units: UG/L			Analysis Date: 10/28/2013 16:59		
Client ID:		Run ID: HC131028-9A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

MS		Sample ID: 1310347-1			Units: UG/L			Analysis Date: 10/28/2013 17:11		
Client ID: Firth 112927		Run ID: HC131028-9A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	111	1	142	1	78	70-130			25	
ETHANE	205	2	267	2	77	70-130			25	
PROPANE	293	1	391	1	75	70-130			25	

The following samples were analyzed in this batch:

1310347-1	1310347-2	1310347-4
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Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **IP131025-5-1** Instrument ID **ICPMS2** Method: **EPA200.8**

DUP		Sample ID: 1310347-1			Units: UG/L			Analysis Date: 10/28/2013 12:18		
Client ID: Firth 112927		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	95.7	1					92	4	30	
BORON	90.6	50					110		30	
CALCIUM	26700	1000					26000	4	30	
IRON	ND	100					100		30	
MAGNESIUM	31700	100					31000	1	30	
MANGANESE	ND	2					2		30	
POTASSIUM	1660	1000					1800		30	
SELENIUM	ND	1					1		30	
SODIUM	64900	1000					65000	0	30	
STRONTIUM	684	1					670	2	30	

LCS		Sample ID: FP131025-5			Units: UG/L			Analysis Date: 10/28/2013 12:12		
Client ID:		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	95.4	1	100		95	85-115			20	
BORON	897	50	1000		90	85-115			20	
CALCIUM	9380	1000	10000		94	85-115			20	
IRON	5140	100	5000		103	85-115			20	
MAGNESIUM	9300	100	10000		93	85-115			20	
MANGANESE	191	2	200		96	85-115			20	
POTASSIUM	4960	1000	5000		99	85-115			20	
SELENIUM	97	1	100		97	85-115			20	
SODIUM	9920	1000	10000		99	85-115			20	
STRONTIUM	94.4	1	100		94	85-115			20	

MB		Sample ID: FP131025-5			Units: UG/L			Analysis Date: 10/28/2013 12:09		
Client ID:		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	ND	1								
BORON	ND	50								
CALCIUM	ND	1000								
IRON	ND	100								
MAGNESIUM	ND	100								
MANGANESE	ND	2								
POTASSIUM	ND	1000								
SELENIUM	ND	1								
SODIUM	ND	1000								
STRONTIUM	ND	1								

Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **IP131025-5-1** Instrument ID **ICPMS2** Method: **EPA200.8**

MS		Sample ID: 1310347-1			Units: UG/L			Analysis Date: 10/28/2013 12:23		
Client ID: Firth 112927		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	200	1	100	92	108	70-130			20	
BORON	1040	50	1000	110	93	70-130			20	
CALCIUM	36900	1000	10000	26000	112	70-130			20	
IRON	5320	100	5000	100	106	70-130			20	
MAGNESIUM	41700	100	10000	31000	104	70-130			20	
MANGANESE	196	2	200	2	98	70-130			20	
POTASSIUM	6810	1000	5000	1800	101	70-130			20	
SELENIUM	97.6	1	100	1	98	70-130			20	
SODIUM	75600	1000	10000	65000	110	70-130			20	
STRONTIUM	790	1	100	670	117	70-130			20	

MSD		Sample ID: 1310347-1			Units: UG/L			Analysis Date: 10/28/2013 12:26		
Client ID: Firth 112927		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	191	1	100	92	98.8	70-130	200	5	20	
BORON	1030	50	1000	110	92.7	70-130	1040	0	20	
CALCIUM	36500	1000	10000	26000	107.5	70-130	36900	1	20	
IRON	5310	100	5000	100	106	70-130	5320	0	20	
MAGNESIUM	41100	100	10000	31000	97.7	70-130	41700	2	20	
MANGANESE	195	2	200	2	98	70-130	196	1	20	
POTASSIUM	6960	1000	5000	1800	104.2	70-130	6810	2	20	
SELENIUM	97.5	1	100	1	98	70-130	97.6	0	20	
SODIUM	74400	1000	10000	65000	97.4	70-130	75600	2	20	
STRONTIUM	783	1	100	670	109.8	70-130	790	1	20	

The following samples were analyzed in this batch: 1310347-1 1310347-2

Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: VL131023-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:14			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	8.97	1	10		90	83-117			20		
TOLUENE	9.1	1	10		91	82-113			20		
ETHYLBENZENE	9.23	1	10		92	81-113			20		
M+P-XYLENE	18.8	1	20		94	82-115			20		
O-XYLENE	9.57	1	10		96	81-115			20		
Surr: DIBROMOFLUOROMETHA	24.3		25		97	84-118					
Surr: TOLUENE-D8	24.1		25		96	85-115					
Surr: 4-BROMOFLUOROBENZE	25.2		25		101	85-115					

LCS		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 11:57			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	504	100	500		101	80-120			20		

LCSD		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:36			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9	1	10		90	83-117	8.97	0	20		
TOLUENE	9.32	1	10		93	82-113	9.1	2	20		
ETHYLBENZENE	9.27	1	10		93	81-113	9.23	0	20		
M+P-XYLENE	19.2	1	20		96	82-115	18.8	2	20		
O-XYLENE	9.41	1	10		94	81-115	9.57	2	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		99	84-118		2			
Surr: TOLUENE-D8	24.8		25		99	85-115		3			
Surr: 4-BROMOFLUOROBENZE	25.9		25		103	85-115		2			

LCSD		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 12:21			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	488	100	500		98	80-120	504	3	20		

Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **VL131023-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL131023-4** Units: **UG/L** Analysis Date: **10/23/2013 13:59**
 Client ID: Run ID: **VL131023-4A** Prep Date: **10/23/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	23.8		25		95	84-118				
Surr: TOLUENE-D8	24.7		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	25.8		25		103	85-115				

The following samples were analyzed in this batch: 1310347-1 1310347-2 1310347-3

Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **AK131023-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK131023-1			Units: MG/L			Analysis Date: 10/23/2013		
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	96.6	5	100		96	85-115			15	

MB		Sample ID: AK131023-1			Units: MG/L			Analysis Date: 10/23/2013		
Client ID:		Run ID: AK131023-1A			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch:

1310347-1	1310347-2
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Client: Western Water and Land, Inc.
 Work Order: 1310347
 Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **IC131022-1-2** Instrument ID **IC** Method: **EPA300.0**

LCS Sample ID: **IC131022-1** Units: **MG/L** Analysis Date: **10/22/2013 16:20**

Client ID: Run ID: **IC131022-1A1** Prep Date: **10/22/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	1.99	0.1	2		100	90-110			15	
CHLORIDE	5.11	0.2	5		102	90-110			15	
NITRITE AS N	1.99	0.1	2		99	90-110			15	
BROMIDE	5.35	0.2	5		107	90-110			15	
NITRATE AS N	5.28	0.2	5		106	90-110			15	
SULFATE	20.1	1	20		100	90-110			15	

MB Sample ID: **IC131022-1** Units: **MG/L** Analysis Date: **10/22/2013 16:34**

Client ID: Run ID: **IC131022-1A1** Prep Date: **10/22/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch:

1310347-1	1310347-2
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Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **pH131024-1-1** Instrument ID **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV			Units: pH		Analysis Date: 10/24/2013			
Client ID:		Run ID: PH131024-1A			Prep Date: 10/24/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	7	0.1	7			6.9-7.1				

DUP		Sample ID: 1310347-1			Units: pH		Analysis Date: 10/24/2013			
Client ID: Firth 112927		Run ID: PH131024-1A			Prep Date: 10/24/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	7.85	0.1					7.88		0.2	

ICV		Sample ID: ICV			Units: pH		Analysis Date: 10/24/2013			
Client ID:		Run ID: PH131024-1A			Prep Date: 10/24/2013		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	6.99	0.1	7			6.95-7.05				

The following samples were analyzed in this batch:

1310347-1	1310347-2
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Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **SC131024-1-1** Instrument ID **pH-1** Method: **SM2510B**

DUP Sample ID: **1310347-1** Units: **umhos/cm** Analysis Date: **10/24/2013**
Client ID: **Firth 112927** Run ID: **SC131024-1A** Prep Date: **10/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	633	1					635	0	10	

The following samples were analyzed in this batch:

1310347-1	1310347-2
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Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **TD131025-1-1** Instrument ID: **Balance** Method: **EPA160.1**

LCS Sample ID: **TD131025-1** Units: **MG/L** Analysis Date: **10/28/2013**
 Client ID: Run ID: **TD131028-1A** Prep Date: **10/25/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	402	20	400		101	85-115			5	

MB Sample ID: **TD131025-1** Units: **MG/L** Analysis Date: **10/28/2013**
 Client ID: Run ID: **TD131028-1A** Prep Date: **10/25/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1310347-1 1310347-2

Client: Western Water and Land, Inc.
Work Order: 1310347
Project: 30000.01.71 GV 86-2 BWQ

QC BATCH REPORT

Batch ID: **TP131031-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS	Sample ID: TP131031-1						Units: MG/L	Analysis Date: 10/31/2013			
Client ID:		Run ID: TP131031-1A						Prep Date: 10/31/2013		DF: 1	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
TOTAL PHOSPHORUS	0.484	0.05	0.5		97	80-120			20		

MB	Sample ID: TP131031-1						Units: MG/L	Analysis Date: 10/31/2013			
Client ID:		Run ID: TP131031-1A						Prep Date: 10/31/2013		DF: 1	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
TOTAL PHOSPHORUS	ND	0.05									

The following samples were analyzed in this batch:
1310347-1
1310347-2



1310387

GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met with the following exception:

The results for 1310387-2 (Trip Blank) indicate GRO in the sample. Further scrutinizing of the chromatogram for this sample revealed the presence of non-target peaks which were later identified as artifacts likely produced in the VOC vial (septa) manufacturing process. The vendor was contacted, and the contamination documented. There were no unique identifiers common to gasoline in the sample. No further action was taken.

Dissolved Gasses:

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.

Metals:



The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.

Inorganics:

The sample was analyzed following MCAWW, EMSL, and Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Nitrate/nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

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Sample Number(s) Cross-Reference Table

OrderNum: 1310387

Client Name: Western Water and Land, Inc.

Client Project Name: GV 86-2 Courtesy

Client Project Number: 30000.01.71

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Rice-Well	1310387-1		WATER	22-Oct-13	15:08
Trip Blank	1310387-2		WATER	22-Oct-13	



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 492-1522

Chain-of-Custody

Form 2026b

PROJECT NAME GCV 86-2 Courtesy		SAMPLER AUVS	DATE 10-22-13	WORKORDER # 1310387			
FACILITY NAME GCV 86-2		PROJECT NO. 30000017	TURNAROUND	PAGE			
FACILITY ID (API)		EDD FORMAT	DISPOSAL	By Lab or Return to Client			
PURCHASE ORDER		BILL TO COMPANY WPX Energy	PH, Cond.				
COMPANY NAME Western Water & Land		INVOICE ATTN TO Brandon DeForth	Anions, ALKIDS,				
SEND REPORT TO Bruce Smith		ADDRESS 1058 CR 215	DR. Metals Lab/FILTA				
ADDRESS 743 Horizon Street		CITY / STATE / ZIP Pacifiude, CO 81635	DRC				
CITY / STATE / ZIP Gerald Junction, CO 81446		PHONE 970-242-0170	DIS. GASSES				
PHONE 970-242-0170		FAX	GRC				
E-MAIL b.smith@westernwaterandland.com		E-MAIL	BART				
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
①	Rice-Well	W	10-22-13	1508	15	1,3	IV ✓
②	TBL, TBA						✓

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Dis. Metals Lab Filter
Highly effervescent sample

of 21

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHCO3 7-Other 8-4 degrees C 9-5035

QC PACKAGE (check below)	RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
LEVEL II (Standard QC)			Nick Selawetz	10-22-13	1715
LEVEL III (Std QC + forms)			Jacob Roddy	10/23/13	1012
LEVEL IV (Std QC + forms + raw data)					
	RECEIVED BY				
	RELINQUISHED BY				
	RECEIVED BY				
	RELINQUISHED BY				
	RECEIVED BY				



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water + Land Workorder No: 1310387

Project Manager: ARW Initials: JLR Date: 10/23/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/>
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/>	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/>	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/>	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF?	<input checked="" type="radio"/>	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/>	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/>	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/>	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/>	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: _____ < green pea _____ > green pea	N/A	<input checked="" type="radio"/>	NO
15. Do any water samples contain sediment? Amount Amount of sediment: _____ dusting _____ moderate _____ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/>	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4 RAD ONLY <input checked="" type="radio"/>		<input checked="" type="radio"/>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>3°</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>10</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: [Signature] for ARW 10/23/13

1310 387

FROM: (970) 242-0170
WESTERN WATER & LAND INC
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 22OCT13
ACTWGT: 38.1 LB
CAD: 9622/OFFC1424
DIMMED: 24 X 14 X 13 IN
BILL 3rd PARTY

TO **AMY WOLF**
AIS ENVIRONMENTAL
225 COMMERCE DR

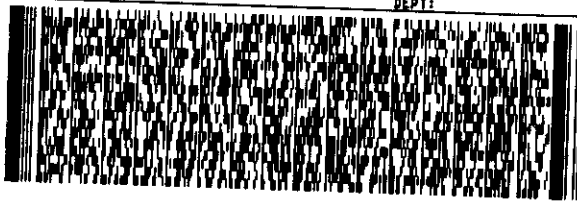
FORT COLLINS CO 80524

(US)

(800) 443-1511

REF:

DEPT:



FedEx
Ground



JT3201306280126

TRK# 7969 7626 0256

10
2

80524

9622 0417 3 (000 733 7652) 4 00 7969 7626 0256



Temp = 3°C

Client: Western Water and Land, Inc.
 Project: 30000.01.71 GV 86-2 Courtesy
 Sample ID: Rice-Well
 Legal Location:
 Collection Date: 10/22/2013 15:08

Date: 12-Nov-13
 Work Order: 1310387
 Lab ID: 1310387-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 10/31/2013	PrepBy: KMP
BICARBONATE AS CaCO3	330		20	MG/L	1	10/31/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/31/2013
TOTAL ALKALINITY AS CaCO3	330		20	MG/L	1	10/31/2013
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/4/2013	PrepBy: BAS
IRON RELATED BACTERIA	1		1	NU	1	11/12/2013
SLIME FORMING BACTERIA	ND		1	NU	1	11/12/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	11/12/2013
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 10/28/2013	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	10/28/2013 18:09
Surr: O-TERPHENYL	94		54-123	%REC	1	10/28/2013 18:09
DISSOLVED GASSES			RSK175		Prep Date: 10/28/2013	PrepBy: JFN
METHANE	ND		1	UG/L	1	10/28/2013 17:46
ETHANE	ND		2	UG/L	1	10/28/2013 17:46
PROPANE	ND		1	UG/L	1	10/28/2013 17:46
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 21:36
TOLUENE	ND		1	UG/L	1	10/23/2013 21:36
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 21:36
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 21:36
O-XYLENE	ND		1	UG/L	1	10/23/2013 21:36
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/23/2013 21:36
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 21:36
Surr: DIBROMOFLUOROMETHANE	97		84-118	%REC	1	10/23/2013 21:36
Surr: TOLUENE-D8	101		85-115	%REC	1	10/23/2013 21:36
Surr: 4-BROMOFLUOROBENZENE	102		85-115	%REC	1	10/23/2013 21:36
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/23/2013	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	10/24/2013 15:06
CHLORIDE	11		0.2	MG/L	1	10/24/2013 15:06
FLUORIDE	0.2		0.1	MG/L	1	10/24/2013 15:06
NITRATE/NITRITE AS N	0.72		0.1	MG/L	1	10/24/2013 15:06
NITRITE AS N	ND		0.1	MG/L	1	10/24/2013 15:06
NITRATE AS N	0.72		0.2	MG/L	1	10/24/2013 15:06
SULFATE	13		1	MG/L	1	10/24/2013 15:06
METALS BY 200.8			EPA200.8		Prep Date: 10/25/2013	PrepBy: NAQ
BARIUM	79		1	UG/L	10	10/28/2013 12:55
BORON	130		50	UG/L	10	10/28/2013 12:55
CALCIUM	12000		1000	UG/L	10	10/28/2013 12:55
IRON	ND		100	UG/L	10	10/28/2013 12:55
MAGNESIUM	23000		100	UG/L	10	10/28/2013 12:55
MANGANESE	ND		2	UG/L	10	10/28/2013 12:55

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 Courtesy
Sample ID: Rice-Well
Legal Location:
Collection Date: 10/22/2013 15:08

Date: 12-Nov-13
Work Order: 1310387
Lab ID: 1310387-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1800		1000	UG/L	10	10/28/2013 12:55
SELENIUM	ND		1	UG/L	10	10/28/2013 12:55
SODIUM	100000		1000	UG/L	10	10/28/2013 12:55
STRONTIUM	540		1	UG/L	10	10/28/2013 12:55
PH			SM4500-H		Prep Date: 10/24/2013	PrepBy: KMP
PH	8.05		0.1	pH	1	10/24/2013
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 10/24/2013	PrepBy: KMP
SPECIFIC CONDUCTIVITY	665		1	umhos/cm	1	10/24/2013
TOTAL DISSOLVED SOLIDS			EPA160.1		Prep Date: 10/25/2013	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	410		20	MG/L	1	10/28/2013
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 10/31/2013	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	10/31/2013

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 Courtesy
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/22/2013

Date: 12-Nov-13
Work Order: 1310387
Lab ID: 1310387-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			SW8260_25		Prep Date: 10/23/2013	PrepBy: SDW
BENZENE	ND		1	UG/L	1	10/23/2013 21:58
TOLUENE	ND		1	UG/L	1	10/23/2013 21:58
ETHYLBENZENE	ND		1	UG/L	1	10/23/2013 21:58
M+P-XYLENE	ND		1	UG/L	1	10/23/2013 21:58
O-XYLENE	ND		1	UG/L	1	10/23/2013 21:58
GASOLINE RANGE ORGANICS	260		100	UG/L	1	10/23/2013 21:58
TOTAL XYLENES	ND		1	UG/L	1	10/23/2013 21:58
Surr: DIBROMOFLUOROMETHANE	97		84-118	%REC	1	10/23/2013 21:58
Surr: TOLUENE-D8	99		85-115	%REC	1	10/23/2013 21:58
Surr: 4-BROMOFLUOROBENZENE	104		85-115	%REC	1	10/23/2013 21:58

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 Courtesy
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/22/2013

Date: 12-Nov-13
Work Order: 1310387
Lab ID: 1310387-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.	M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.	L - LCS Recovery below lower control limit.
Y2 - Chemical Yield outside default limits.	H - LCS Recovery above upper control limit.
W - DER is greater than Warning Limit of 1.42	P - LCS, Matrix Spike Recovery within control limits.
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.	N - Matrix Spike Recovery outside control limits
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.	NC - Not Calculated for duplicate results less than 5 times MDC
G - Sample density differs by more than 15% of LCS density.	B - Analyte concentration greater than MDC.
D - DER is greater than Control Limit	B3 - Analyte concentration greater than MDC but less than Requested MDC.
M - Requested MDC not met.	
LT - Result is less than requested MDC but greater than achieved MDC.	

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client: Western Water and Land, Inc.
Project: 30000.01.71 GV 86-2 Courtesy
Sample ID: Trip Blank
Legal Location:
Collection Date: 10/22/2013

Date: 12-Nov-13
Work Order: 1310387
Lab ID: 1310387-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<p>G - A pattern resembling gasoline was detected in this sample. D - A pattern resembling diesel was detected in this sample. M - A pattern resembling motor oil was detected in this sample. C - A pattern resembling crude oil was detected in this sample. 4 - A pattern resembling JP-4 was detected in this sample. 5 - A pattern resembling JP-5 was detected in this sample. H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest. L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest. Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline - JP-8 - diesel - mineral spirits - motor oil - Stoddard solvent - bunker C</p>						

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Date: 11/12/2013 1:37

Client: Western Water and Land, Inc.
 Work Order: 1310387
 Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: EX131028-1-1 Instrument ID FUELS-1 Method: SW8015M

LCS		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 13:08		
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.7	0.5	10		107	36-150			20	
Surr: O-TERPHENYL	1.26		1.25		101	54-123				

LCSD		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 13:35		
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	11	0.5	10		110	36-150	10.7	3	20	
Surr: O-TERPHENYL	1.3		1.25		104	54-123		3		

MB		Sample ID: EX131028-1			Units: MG/L			Analysis Date: 10/28/2013 12:40		
Client ID:		Run ID: HC131028-3A			Prep Date: 10/28/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.36		1.25		108	54-123				

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310387
 Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **HC131028-9-1** Instrument ID **MEE-1** Method: **RSK175**

DUP Sample ID: **1310387-1** Units: **UG/L** Analysis Date: **10/28/2013 18:09**
 Client ID: **Rice-Well** Run ID: **HC131028-9A** Prep Date: **10/28/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1					1		25	
ETHANE	ND	2					2		25	
PROPANE	ND	1					1		25	

LCS Sample ID: **HC131028-9** Units: **UG/L** Analysis Date: **10/28/2013 16:56**
 Client ID: Run ID: **HC131028-9A** Prep Date: **10/28/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	133	1	142		94	80-120			25	
ETHANE	247	2	267		93	80-120			25	
PROPANE	355	1	391		91	80-120			25	

LCSD Sample ID: **HC131028-9** Units: **UG/L** Analysis Date: **10/28/2013 18:11**
 Client ID: Run ID: **HC131028-9A** Prep Date: **10/28/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	132	1	142		93	80-120	133	1	25	
ETHANE	246	2	267		92	80-120	247	1	25	
PROPANE	351	1	391		90	80-120	355	1	25	

MB Sample ID: **HC131028-9** Units: **UG/L** Analysis Date: **10/28/2013 16:59**
 Client ID: Run ID: **HC131028-9A** Prep Date: **10/28/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310387
 Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **IP131025-5-1** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FP131025-5			Units: UG/L			Analysis Date: 10/28/2013 12:12			
Client ID:		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	95.4	1	100		95	85-115			20		
BORON	897	50	1000		90	85-115			20		
CALCIUM	9380	1000	10000		94	85-115			20		
IRON	5140	100	5000		103	85-115			20		
MAGNESIUM	9300	100	10000		93	85-115			20		
MANGANESE	191	2	200		96	85-115			20		
POTASSIUM	4960	1000	5000		99	85-115			20		
SELENIUM	97	1	100		97	85-115			20		
SODIUM	9920	1000	10000		99	85-115			20		
STRONTIUM	94.4	1	100		94	85-115			20		

MB		Sample ID: FP131025-5			Units: UG/L			Analysis Date: 10/28/2013 12:09			
Client ID:		Run ID: IM131028-10A2			Prep Date: 10/25/2013			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	ND	1									
BORON	ND	50									
CALCIUM	ND	1000									
IRON	ND	100									
MAGNESIUM	ND	100									
MANGANESE	ND	2									
POTASSIUM	ND	1000									
SELENIUM	ND	1									
SODIUM	ND	1000									
STRONTIUM	ND	1									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310387
 Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: VL131023-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:14			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	8.97	1	10		90	83-117			20		
TOLUENE	9.1	1	10		91	82-113			20		
ETHYLBENZENE	9.23	1	10		92	81-113			20		
M+P-XYLENE	18.8	1	20		94	82-115			20		
O-XYLENE	9.57	1	10		96	81-115			20		
Surr: DIBROMOFLUOROMETHA	24.3		25		97	84-118					
Surr: TOLUENE-D8	24.1		25		96	85-115					
Surr: 4-BROMOFLUOROBENZE	25.2		25		101	85-115					

LCS		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 11:57			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	504	100	500		101	80-120			20		

LCSD		Sample ID: VL131023-4			Units: UG/L			Analysis Date: 10/23/2013 13:36			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9	1	10		90	83-117	8.97	0	20		
TOLUENE	9.32	1	10		93	82-113	9.1	2	20		
ETHYLBENZENE	9.27	1	10		93	81-113	9.23	0	20		
M+P-XYLENE	19.2	1	20		96	82-115	18.8	2	20		
O-XYLENE	9.41	1	10		94	81-115	9.57	2	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		99	84-118		2			
Surr: TOLUENE-D8	24.8		25		99	85-115		3			
Surr: 4-BROMOFLUOROBENZE	25.9		25		103	85-115		2			

LCSD		Sample ID: VL131023-7			Units: UG/L			Analysis Date: 10/23/2013 12:21			
Client ID:		Run ID: VL131023-4A			Prep Date: 10/23/2013			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	488	100	500		98	80-120	504	3	20		

Client: Western Water and Land, Inc.
Work Order: 1310387
Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **VL131023-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL131023-4** Units: **UG/L** Analysis Date: **10/23/2013 13:59**
 Client ID: Run ID: **VL131023-4A** Prep Date: **10/23/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	23.8		25		95	84-118				
Surr: TOLUENE-D8	24.7		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	25.8		25		103	85-115				

The following samples were analyzed in this batch:

1310387-1	1310387-2
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Client: Western Water and Land, Inc.
Work Order: 1310387
Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **AK131031-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: AK131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	101	5	100		101	85-115			15	

MB		Sample ID: AK131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: AK131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1310387
 Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **IC131023-1-2** Instrument ID **IC** Method: **EPA300.0**

LCS		Sample ID: IC131023-1			Units: MG/L			Analysis Date: 10/24/2013 12:03		
Client ID:		Run ID: IC131024-1A1			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	2.05	0.1	2		103	90-110			15	
CHLORIDE	5.14	0.2	5		103	90-110			15	
NITRITE AS N	1.97	0.1	2		98	90-110			15	
BROMIDE	5.36	0.2	5		107	90-110			15	
NITRATE AS N	5.31	0.2	5		106	90-110			15	
SULFATE	20.3	1	20		102	90-110			15	

MB		Sample ID: IC131023-1			Units: MG/L			Analysis Date: 10/24/2013 12:17		
Client ID:		Run ID: IC131024-1A1			Prep Date: 10/23/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1310387
Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **pH131024-1-1** Instrument ID **pH-1** Method: **SM4500-H**

CCV	Sample ID: CCV					Units: pH	Analysis Date: 10/24/2013				
Client ID:		Run ID: PH131024-1A					Prep Date: 10/24/2013			DF: 1	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
PH	7	0.1	7			6.9-7.1					

ICV	Sample ID: ICV					Units: pH	Analysis Date: 10/24/2013				
Client ID:		Run ID: PH131024-1A					Prep Date: 10/24/2013			DF: 1	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
PH	6.99	0.1	7			6.95-7.05					

The following samples were analyzed in this batch: 1310387-1

Client: Western Water and Land, Inc.
Work Order: 1310387
Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **TD131025-1-1** Instrument ID: **Balance** Method: **EPA160.1**

LCS		Sample ID: TD131025-1			Units: MG/L			Analysis Date: 10/28/2013		
Client ID:		Run ID: TD131028-1A			Prep Date: 10/25/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	402	20	400		101	85-115			5	

MB		Sample ID: TD131025-1			Units: MG/L			Analysis Date: 10/28/2013		
Client ID:		Run ID: TD131028-1A			Prep Date: 10/25/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1310387
Project: 30000.01.71 GV 86-2 Courtesy

QC BATCH REPORT

Batch ID: **TP131031-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.484	0.05	0.5		97	80-120			20	

MB		Sample ID: TP131031-1			Units: MG/L			Analysis Date: 10/31/2013		
Client ID:		Run ID: TP131031-1A			Prep Date: 10/31/2013			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch: